

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 851

Injection pump
Pump designation : PES6P120A320RS3290
: -1
EP type number : 0 412 026 765

Governor
Governor design. : RQ300/1050PA999-5
Governor no. : 0 421 801 663

Cust. part No. : CCEP 5137 A 66-216

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIHR 062045 B3
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.25
Tolerance mm : + 0.50
Check
tolerance mm : + 0.10

Rack travel in mm : 18.00
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.80
 Tolerance mm : \pm 0.05
 Del. quantity
 cm³/1000 strokes : 155.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 275

 Rack travel in mm : -7.90
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve
 travel mm : 1.89
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1127
 guide sleeve
 travel mm : 6.36
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 469

guide sleeve
 travel mm : 4.14
 Tolerance mm : \pm 0.10

 Rated speed rpm : 710
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1380
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700

 Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 155.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 98.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
 Rated speed rpm : 1120
 Tolerance 1/min : \pm 5

rack travel mm : -8.80
 Rated speed rpm : 1250
 Tolerance 1/min : \pm 15

rack travel mm : -12.30
 Tolerance mm : \pm 0.55

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.90
Tolerance mm : \pm 0.10

rack travel mm : -10.80
Rated speed rpm : 450
Tolerance 1/min : \pm 50

Rated speed rpm : 200

CRT mm max. : < -6.80

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : -4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 0.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -0.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : -0.25
Tolerance mm : \pm 0.10

Pressure hPa : 120
rack travel mm : -0.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.06.96
Test oil : ISO 4113

Combination No. : 0 402 046 867

Injection pump
Pump designation : PES6P120A720RS3345
EP type number : 0 412 026 779

Governor
Governor design. : RQ300/1025PA1214
Governor no. : 0 421 801 784

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8360.46.4669
Power KW : 196.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 175
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 12.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0
Tolerance

cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 550

Rack travel in mm : 14.30
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 194.0
Tolerance

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 11.85
Rated speed rpm : 1085
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 12.85
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.85
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.85
Rated speed rpm : 1085
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 402 076 808

Injection pump
Pump designation : PES6P120A720RS3371
EP type number : 0 412 026 791

Governor
Governor design. : RSV450...1050P5A649
Governor no. : 0 421 833 566

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.534
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 230
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 9.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s : + 4.0

Spreed
 Tolerance
 cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.50
 Tolerance mm : + - 0.10

Del. quantity
 cm3/1000 strokes : 20.0

Tolerance
 cm3/1000 strokes : + - 3.0

Check tolerance
 cm3/1000S. : + - 6.0

Spreed
 Tolerance
 cm3/1000 strokes : 8.0

Check tolerance
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 126.0

Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 96.0

RATED SPEED

rack travel mm : 8.20
Rated speed rpm : 1075

Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1110

Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55

Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1125

LOW IDLE

control lever
position degree : 74.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.00

Testing:

Rated speed rpm : 450
rack travel mm : 4.50
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 9.25
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 9.20
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 425
rack travel mm : 8.40
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.20
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.40
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.10
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 327.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 4.00
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 17.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve travel mm : 2.04
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1077
 guide sleeve travel mm : 10.24
 Tolerance mm : \pm 0.15
 Rated speed rpm : 704
 guide sleeve travel mm : 6.53
 Tolerance mm : \pm 0.25
 Rated speed rpm : 400
 guide sleeve travel mm : 3.92
 Tolerance mm : \pm 0.25

Rated speed rpm : 1310
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1158
 Rack travel in mm : 12.00
 Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 327.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 119.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.10
 Rated speed rpm : 1065
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1160
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1275

LOW IDLE

control lever position degree : 72.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.00
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 7.00

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.10
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 12.85
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 11.95
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : +- 0.10

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.10
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 7.75
Tolerance mm : +- 0.20

Rated speed rpm : 980

Pressure hPa : 760
rack travel mm : 11.50
Tolerance mm : +- 0.05

Pressure hPa : 360
rack travel mm : 8.75
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 344.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 5.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 192.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1065
Tolerance 1/min : +- 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 671

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1297K
Governor no. : 0 421 815 524

Cust. part No. : 1316184/1

Customer-spec. information

Customer : DAF
Motor : PF 205 M
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 12.10
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 207.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000s. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000s. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 4.90
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000s. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve
 travel mm : 1.71
 Tolerance mm : + - 0.20
 Rated speed rpm : 1206
 guide sleeve
 travel mm : 10.12
 Tolerance mm : + - 0.15
 Rated speed rpm : 813
 guide sleeve
 travel mm : 6.81
 Tolerance mm : + - 0.25
 Rated speed rpm : 450
 guide sleeve
 travel mm : 3.85
 Tolerance mm : + - 0.25

Rated speed rpm : 1480
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1329
 Rack travel in mm : 11.10
 Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 207.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000s. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000s. : 9.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.10
 Rated speed rpm : 1195
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1300
 Tolerance 1/min : + - 15
 rack travel mm : 0.70
 Tolerance mm : + - 0.70
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 71.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 12.10
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : + 0.10

Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : + 0.10

Rated speed rpm : 1150
rack travel mm : 12.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 850
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 850
rack travel mm : 8.05
Tolerance mm : + 0.10

Rated speed rpm : 850
Pressure hPa : 420
rack travel mm : 11.35
Tolerance mm : + 0.05

Pressure hPa : 150
rack travel mm : 9.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1195
Tolerance 1/min : + 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 672

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1298K
Governor no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer-spec. information

Customer : DAF
Motor : PF 183 M
Power KW : 183.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 10.80
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 184.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 4.90
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve
 travel mm : 1.71
 Tolerance mm : + - 0.20
 Rated speed rpm : 1200
 guide sleeve
 travel mm : 10.06
 Tolerance mm : + - 0.15
 Rated speed rpm : 811
 guide sleeve
 travel mm : 6.79
 Tolerance mm : + - 0.25
 Rated speed rpm : 450
 guide sleeve
 travel mm : 3.85
 Tolerance mm : + - 0.25

Rated speed rpm : 1480
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1343
 Rack travel in mm : 9.80
 Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 184.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 117.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 9.80
 Rated speed rpm : 1190
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1285
 Tolerance 1/min : + - 15

rack travel mm : 0.70
 Tolerance mm : + - 0.70
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 72.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + - 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 10.80
Tolerance mm : + - 0.05

Rated speed rpm : 1000
rack travel mm : 10.90
Tolerance mm : + - 0.10

Rated speed rpm : 850
rack travel mm : 11.05
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 10.90
Tolerance mm : + - 0.10

Rated speed rpm : 650
rack travel mm : 10.10
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : + - 0.10

Rated speed rpm : 1150
rack travel mm : 10.80
Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 850
Pressure hPa : 1500
rack travel mm : 11.05
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 850
rack travel mm : 7.95
Tolerance mm : + - 0.10

Rated speed rpm : 850
Pressure hPa : 350
rack travel mm : 10.20
Tolerance mm : + - 0.05

Pressure hPa : 130
rack travel mm : 8.40
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1190
Tolerance 1/min : + - 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 779

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQ300/1000PA1163
Governor no. : 0 421 801 734

Cust. part No. : B0165-6-4

Customer-spec. information

Customer : KHD
Motor : BF6M1015C
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 340.0

Tolerance
 cm³/1000 strokes : + 1.0

 Check tolerance
 cm³/1000S. : + 4.0

 Spred
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 300

 Rack travel in mm : 5.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spred
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.73
 Tolerance mm : + 0.10

 Rated speed rpm : 1051
 guide sleeve
 travel mm : 6.36
 Tolerance mm : + 0.10

 Rated speed rpm : 1000
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

 Rated speed rpm : 388
 guide sleeve
 travel mm : 4.79
 Tolerance mm : + 0.10

 Rated speed rpm : 460
 guide sleeve
 travel mm : 6.00

Tolerance mm : + 0.10

 Rated speed rpm : 1210
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 465

 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1700
 Del. quantity
 cm³/1000 strokes : 340.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 100.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00
 Rated speed rpm : 1045
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 365
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.00
Tolerance mm : \pm 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 14.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 365
rack travel mm : 9.80
Tolerance mm : \pm 0.10

Pressure hPa : 1000
rack travel mm : 13.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 780

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQ300/950PA1121
Governor no. : 0 421 801 701

Cust. part No. : 04221524KY016517

Customer-spec. information

Customer : KHD
Motor : BF6M1015/C
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 14.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 362.0

Tolerance _____
cm³/1000 strokes : + 1.0

Check tolerance _____
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance _____
cm³/1000s. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.23
Tolerance mm : + 0.10

Rated speed rpm : 1001
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 385
guide sleeve
travel mm : 5.22
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1700
Del. quantity
cm³/1000 strokes : 362.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1165

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 7.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 14.50
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 14.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.00
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 550
rack travel mm : 10.95
Tolerance mm : \pm 0.20

Pressure hPa : 1000
rack travel mm : 13.10
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 220
Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 240.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity cm³/1000 strokes : 200.0
Tolerance cm³/1000 strokes : \pm 20.0
Check tolerance cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 20.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

B01

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 402 648 973

Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880

Governor
Governor design. : RQ300/950PA1121
Governor no. : 0 421 801 701

Cust. part No. : 04221534KY0165-17

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 7- 2- 6
: - 5- 4- 3

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 15.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 380.0

Tolerance _____
cm³/1000 strokes : + 1.0

Check tolerance _____
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.23
Tolerance mm : + 0.10

Rated speed rpm : 1001
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 385
guide sleeve
travel mm : 5.22
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure

hPa : 1600

Del. quantity
cm³/1000 strokes : 380.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 7.30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 15.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1600
rack travel mm : 15.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.40
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 570
rack travel mm : 11.85
Tolerance mm : \pm 0.20

Pressure hPa : 1150
rack travel mm : 14.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 220
Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 250.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity cm³/1000 strokes : 220.0
Tolerance cm³/1000 strokes : \pm 20.0
Check tolerance cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 20.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.09.95
Test oil : ISO 4113

Combination No. : 0 402 896 016

Injection pump
Pump designation : PE6P120A320RS8034
EP type number : 0 412 826 032

Governor
Governor design. : RE30
Governor no. : 0 421 890 028

Cust. part No. : 8194088 P03 rel 8/95

Customer-spec. information
Customer : VOLVO-TRUCK
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 11.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4

Tolerance V : +/- 0.6
Check tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600
Uact V : 2.800
Del. quantity cm3/1000 strokes : 303.0
Tolerance cm3/1000 strokes : +/- 1.0
Check tolerance cm3/1000S. : +/- 4.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.800
Del. quantity cm3/1000 strokes : 261.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0
Spread
Tolerance cm3/1000 strokes : 10.0
Check tolerance cm3/1000S. : 14.0

Rated speed rpm : 950
Uact V : 2.200
Del. quantity cm3/1000 strokes : 181.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 250
Uact V : 1.470
Tolerance Volt : +/- 0.060

Check tolerance
Volt : +- 0.060
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +- 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265-2
Governor no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.15

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30
Check tolerance °NW : + 0.50

Start of delivery blocking

Tolerance : + 0.30
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.40

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 287.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 9.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 14.0
 Rated speed rpm : 250
 Rack travel in mm : 6.80
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spred
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.48
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1055
 guide sleeve
 travel mm : 4.82
 Tolerance mm : \pm 0.15
 Rated speed rpm : 970
 guide sleeve
 travel mm : 4.50
 Tolerance mm : \pm 0.10
 Rated speed rpm : 358
 guide sleeve
 travel mm : 3.50

Tolerance mm : \pm 0.10
 Rated speed rpm : 490
 guide sleeve
 travel mm : 4.50
 Tolerance mm : \pm 0.10
 Rated speed rpm : 1129
 guide sleeve
 travel mm : 5.50
 Tolerance mm : \pm 0.10
 Rated speed rpm : 1600
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 16.00
 Tolerance mm : \pm 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 287.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 9.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 14.0

CONTROL LEVER

control lever
 position degree : 38.0
 tolerance degree : \pm 4.0

control lever
 position degree : 106.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.40
 Rated speed rpm : 1045
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 85.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 6.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 20

Rated speed rpm : 150

CRT mm min. : $>$ 9.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500
Pressure hPa : 290
rack travel mm : 10.50
Tolerance mm : \pm 0.15

Pressure hPa : 800
rack travel mm : 11.90
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $<$ 170
Rated speed rpm : $>$ 100

Check
speed 1/min : $<$ 190
Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.96
Test oil : ISO 4113

Combination No. : 0 402 996 307

Injection pump
Pump designation : PES6P120A720RS8512
: -2
EP type number : 0 412 926 212

Governor
Governor design. : RE30
Governor no. : 0 421 890 024

Cust. part No. : CCEP 5156 66-242

Customer-spec. information

Customer : RENAULT V.I.
Motor : 062465A42B42C42

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : -0.15
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 20.50

and maximum rack
travel : 12.00
Difference * CS : 3.10

stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Test with control rod
in stop position

Setting point
(P, R and H pump)

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

Check value
(P, R and H pump)

(C) INJECTION PUMP WITH POSITIONER

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

TEST POINT V1

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Rated speed rpm : 900
Uact V : 3.050
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

Check value
(M pump)

FUEL DELIVERY CHARACTERISTICS

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Rated speed rpm : 625
Uact V : 3.260
Del. quantity
cm³/1000 strokes : 392.0
Tolerance
cm³/1000 strokes : +/- 10.0
Check tolerance
cm³/1000S. : +/- 12.0
Spread
Tolerance
cm³/1000 strokes : 16.0

Stop position

Check tolerance
cm³/1000S. : 18.0

Uact V : Value with
deenergised adjusting magnet
and control rod in

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.310
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.070
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 14.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 19.0
Check tolerance
cm³/1000S. : \pm 22.0
Spreed
Tolerance
cm³/1000 strokes : 40.0
Check tolerance
cm³/1000S. : 50.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 054

Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022

Governor
Governor design. : RQV300...1300MW150
Governor no. : 0 420 083 334

Cust. part No. : 0260747002

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 3.90

Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 0.91

Tolerance mm : + - 0.20

Rated speed rpm : 1354

guide sleeve

travel mm : 7.15

Tolerance mm : + - 0.15

Rated speed rpm : 1130

guide sleeve

travel mm : 5.40

Tolerance mm : + - 0.25

Rated speed rpm : 780

guide sleeve

travel mm : 3.72

Tolerance mm : + - 0.25

Rated speed rpm : 1679

guide sleeve

travel mm : 12.00

Tolerance mm : + - 0.25

Rated speed rpm : 1780

guide sleeve

travel mm : 13.50

Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1475

Rack travel in mm : 10.00

Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 106.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1345

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1575

LOW IDLE

control lever

position degree : 66.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.90

Tolerance mm : + - 0.10

Rated speed rpm : 200
CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 2.30
Tolerance mm : + - 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : + - 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 117.0
Tolerance cm3/1000 strokes : + - 1.5
Check tolerance cm3/1000S. : + - 4.0
Spread

Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 9.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 66.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 150.0
Tolerance cm3/1000 strokes : + - 5.0
Check tolerance cm3/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm3/1000 strokes : 12.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread
Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 5.5

End of test specification sheet

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 403 476 131

Injection pump
Pump designation : PES6MW100/320RS1224
EP type number : 0 413 406 210

Governor
Governor design. : RSV300...1100MW1A358
Governor no. : 0 420 085 234

Cust. part No. : 11030789 P03

Customer-spec. information

Customer : VME
Motor : TD 63KDE
Power KW : 88.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm³/1000s. : 6.0
Rated speed rpm : 315

Rack travel in mm : 6.10
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 17.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000s. : + - 4.5
Spred
Tolerance cm³/1000 strokes : 3.5
Check tolerance cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : + - 0.35
governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure hPa : 1500
Del. quantity cm³/1000 strokes : 106.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000s. : + - 3.0
Spred
Tolerance cm³/1000 strokes : 3.5
Check tolerance cm³/1000s. : 6.0

CONTROL LEVER

control lever position degree : 102.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1140
Tolerance 1/min : + - 5
rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : + - 15
rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 1340
rack travel mm : 4.00
Rated speed rpm : 1195

LOW IDLE

control lever position degree : 68.0
tolerance degree : + - 4.0
Setting point w/out bumper spring

Rated speed rpm : 315
rack travel mm : 5.60

Testing:

Rated speed rpm : 315
rack travel mm : 6.10
Tolerance mm : + - 0.10
rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : + - 30
Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : + - 0.05
Rated speed rpm : 500
rack travel mm : 13.35
Tolerance mm : + - 0.05

Rated speed rpm : 820
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 690
rack travel mm : 13.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Pressure hPa : 120
rack travel mm : 10.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 121.0
Tolerance cm³/1000 strokes : \pm 1.5
Check tolerance cm³/1000S. : \pm 4.0

Spread
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 7.0

Aneroid pressure hPa : -

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 73.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1140
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity cm³/1000 strokes : 100.0
Tolerance cm³/1000 strokes : \pm 5.0
Check tolerance cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 315
Del. quantity cm³/1000 strokes : 17.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.5
Spread
Tolerance cm³/1000 strokes : 3.5
Check tolerance cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 403 476 144

Injection pump
Pump designation : PES6MW100/720RS1131
: -1
EP type number : 0 413 406 165

Governor
Governor design. : RSV750...1200MWOA329
: -16
Governor no. : 0 420 085 288

Cust. part No. : 0270740402

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 148.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 104.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 750

Rack travel in mm : 4.60
 Tolerance mm : + 0.25
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 102.0

RATED SPEED

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1400

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1230
 rack travel mm : 12.10

Rated speed rpm : 1314
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1231
 rack travel mm : 12.10

Rated speed rpm : 1315
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1232
 rack travel mm : 12.10

Rated speed rpm : 1316
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1233
 rack travel mm : 12.10

Rated speed rpm : 1317
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1238
 rack travel mm : 12.10

Rated speed rpm : 1322
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1239
 rack travel mm : 12.10

Rated speed rpm : 1323
 Tolerance 1/min : + 4
 rack travel mm : 4.00

LOW IDLE

control lever
position degree : 84.0

Testing:

Rated speed rpm : 750
rack travel mm : 4.60
Tolerance mm : \pm 0.25

rack travel mm : 2.00
Rated speed rpm : 775
Tolerance 1/min : \pm 25

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1180
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 2.20
Tolerance mm : \pm 0.15

Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.07.96
Test oil : ISO 4113

Combination No. : 9 400 085 390

Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039

Governor
Governor design. : RQV300...1300AB1310L
Governor no. : 9 420 080 388

Cust. part No. : 0260746902

Customer-spec. information

Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 95.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.10

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 13.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : \pm 0.25

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : \pm 0.05

Rated speed rpm : 500

guide sleeve

travel mm : 2.5

Tolerance mm : \pm 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 900

Del. quantity

cm³/1000 strokes : 95.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 62.0

tolerance degree : \pm 4.0

control lever

position degree : 110.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.80

Rated speed rpm : 1385

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1530

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 70.0

tolerance degree : \pm 4.0

control lever

position degree : 21.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 9.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : 0.50
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 1.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80
Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 88.5
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.0

Aneroid pressure hPa : 900
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 90.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : \pm 0.10
Del. quantity cm³/1000 strokes : 93.0
Tolerance cm³/1000 strokes : \pm 7.5
Check tolerance cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 4.5
Spred
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.07.96
Test oil : ISO 4113

Combination No. : 9 400 085 391

Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039

Governor
Governor design. : RQV300...1300AB1310L
Governor no. : 9 420 080 388

Cust. part No. : 0260745802

Customer-spec. information

Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 150.0

TEST TENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 95.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.10
Tolerance mm : + - 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : + - 2.0

Check tolerance
cm3/1000S. : + - 4.5

Spread
Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 1.05
Tolerance mm : + - 0.25

Rated speed rpm : 1500

guide sleeve
travel mm : 8.55
Tolerance mm : + - 0.05

Rated speed rpm : 500

guide sleeve
travel mm : 2.55
Tolerance mm : + - 0.25

Rated speed rpm : 750

guide sleeve
travel mm : 4.20
Tolerance mm : + - 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 95.0

Tolerance
cm3/1000 strokes : + - 1.0

Check tolerance
cm3/1000S. : + - 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 62.0
tolerance degree : + - 4.0

control lever

position degree : 110.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 10.80

Rated speed rpm : 1385
Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1530
Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50
Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 70.0
tolerance degree : + - 4.0

control lever

position degree : 21.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.10
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 9.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : 0.50
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 1.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80
Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 88.5
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.0

Aneroid pressure hPa : 900
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 90.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : \pm 0.10
Del. quantity cm³/1000 strokes : 93.0
Tolerance cm³/1000 strokes : \pm 7.5
Check tolerance cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 400 866 229

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C873L
Governor no. : 0 420 232 628

Cust. part No. : 0423 2077 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF6L 913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

+ rack travel mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : + - 5

+ rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + - 15

+ rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1520

+ rack travel mm : 4.00
Rated speed rpm : 1375

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

+ control lever
position degree : 71.0
tolerance degree : + - 4.0

+ Setting point w/out bumper spring

+ rated speed rpm : 325
rack travel mm : 9.10

Testing:

+ rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : + - 0.10

+ rack travel mm : 2.00
Rated speed rpm : 520
Tolerance 1/min : + - 30

TORQUE CONTROL

+ rated speed rpm : 1250
rack travel mm : 13.00
Tolerance mm : + - 0.05

+ rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : + - 0.10

+ rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : + - 4.0

RATED SPEED

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.10
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 13.80
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00

Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.96
Test oil : ISO 4113

Combination No. : 0 402 076 800

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV450...1100P2A640
Governor no. : 0 421 833 552

Cust. part No. : RE66248

Customer-spec. information

Customer : DEERE
Motor : 6081HDW04
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : 7.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 147.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spred
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.90

Testing:

Rated speed rpm : 450
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.80
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 13.60
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.50
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 1000
rack travel mm : 12.90
Tolerance mm : + 0.20

Pressure hPa : 720
rack travel mm : 11.30
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1160
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 29.07.96
Test oil : ISO 4113

Combination No. : 0 402 076 803

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0 412 006 706

Governor
Governor design. : RSV400...1200P5A645
Governor no. : 0 421 833 558

Cust. part No. : 1825466c91

Customer-spec. information

Customer : NAVISTAR
Motor : DTA-466
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 5.30

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 103.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40

Rated speed rpm : 1245

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1305

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 73.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400

rack travel mm : 5.30

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 13.45

Tolerance mm : \pm 0.05

Rated speed rpm : 800

rack travel mm : 14.15

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 9.30
Tolerance mm : + - 0.20

Rated speed rpm : 1200

Pressure hPa : 650
rack travel mm : 13.30
Tolerance mm : + - 0.20

Pressure hPa : 315
rack travel mm : 10.70
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1245
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 617

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...975PA909
: -12K
Governor no. : 0 421 815 531

Cust. part No. : 313GC5224-P10

Customer-spec. information

Customer : MACK
Motor : EN7300A
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.30
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.27
Tolerance mm : + 0.20

Rated speed rpm : 1030
guide sleeve
travel mm : 8.84
Tolerance mm : + 0.15

Rated speed rpm : 524
guide sleeve
travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 2.30
Tolerance mm : + 0.25

Rated speed rpm : 1430
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1020
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.30
Tolerance mm : + 0.10

Rated speed rpm : 225

CRT mm min. : > 4.80

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.55
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 12.00

Tolerance mm : \pm 0.10
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 975
rack travel mm : 8.20
Tolerance mm : \pm 0.20

Rated speed rpm : 975

Pressure hPa : 460
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 235
rack travel mm : 9.30
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 275

Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 223.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1020
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 734

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governer design. : RSV475...1100A0C847R
Governer no. : 9 420 034 713

Cust. part No. : 3930153

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 74.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + - 1.0

Prestroke mm : 2.45
Tolerance mm : + - 0.05
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + - 0.50
Check tolerance °NW : + - 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : + - 0.50
Check tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 109.5

Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5
 Rated speed rpm : 500
 Rack travel in mm : 5.65
 Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 20.5
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : +- 0.20
 governor spring
 pre-tension
 click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 109.5
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spred

Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 101.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.70
 Rated speed rpm : 1165
 Tolerance 1/min : +- 5

rack travel mm : 6.00
 Rated speed rpm : 1230
 Tolerance 1/min : +- 5

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1375

LOW IDLE

control lever
 position degree : 81.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
 rack travel mm : 5.15

Testing:

Rated speed rpm : 500
 rack travel mm : 5.65
 Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.75
 Tolerance mm : +- 0.05

Rated speed rpm : 750
 rack travel mm : 13.70

Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 750
rack travel mm : 12.75
Tolerance mm : + - 0.10

Rated speed rpm : 750

Pressure hPa : 650
rack travel mm : 13.25
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1165
Tolerance 1/min : + - .5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.96
Test oil : ISO 4113

Combination No. : 0 401 846 760

Injection pump
Pump designation : PE6P110A320RS3108X
EP type number : 0 411 816 730

Governor
Governor design. : RQV250...1100PA920
: -2
Governor no. : 0 421 813 779

Cust. part No. : 469609-P09 v. 08/95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD102

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 9.70
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5
 Rated speed rpm : 250
 Rack travel in mm : 5.15
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 32.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER
 control lever
 position degree : 65.0
 tolerance degree : + - 4.0
 control lever
 position degree : 119.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.35
 Rated speed rpm : 1165
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : + - 15
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + - 4.0

control lever
 position degree : 12.0
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250
 rack travel mm : 5.15
 Tolerance mm : + - 0.10
 Rated speed rpm : 150
 CRT mm min. : > 6.30
 Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.35
 Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 2.50
Tolerance mm : \pm 0.15

Pressure hPa : 250
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.96
Test oil : ISO 4113

Combination No. : 0 401 876 803

Injection pump
Pump designation : PE6P110A320RS3266
EP type number : 0 411 816 777

Governor
Governor design. : RSV350...1250POA578
Governor no. : 0 421 833 434

Cust. part No. : 866200-P05 v.05.96

Customer-spec. information

Customer : PENTA
Motor : TWD 630ME

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 9.60
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 132.0

Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 8.0
 Rated speed rpm : 350
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 5.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring pre-tension
 click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 132.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spreed Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 46.0
 tolerance degree : + 4.0

control lever position degree : 96.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 1280
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1345
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1340

LOW IDLE

control lever position degree : 68.0
 tolerance degree : + 4.0

control lever position degree : 18.0
 tolerance degree : + 4.0

Testing:

rack travel mm : 2.00
 Rated speed rpm : 480
 Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.00
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.60
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 2.30
Tolerance mm : \pm 0.10

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1280
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 402 044 700

Injection pump
Pump designation : PES4P110A320RS3350
EP type number : 0 412 014 700

Governor
Governor design. : RQV350...1400PA1221K
Governor no. : 0 421 815 472

Cust. part No. : 16700-08703 / M
: -2004

Customer-spec. information

Customer : NMI
Motor : B4.4G EURO II
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 4- 2- 1- 3

Phasing : 0-90-180-270
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

*NW after s.o.d. : 180.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 15.40
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 178.0

Tolerance cm³/1000 strokes : +- 1.0
 Check tolerance cm³/1000S. : +- 3.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 9.40
 Tolerance mm : +- 0.10
 Del. quantity cm³/1000 strokes : 31.0
 Tolerance cm³/1000 strokes : +- 2.5
 Check tolerance cm³/1000S. : +- 5.0
 Spred Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.46
 Tolerance mm : +- 0.20
 Rated speed rpm : 1417
 guide sleeve travel mm : 9.99
 Tolerance mm : +- 0.15
 Rated speed rpm : 994
 guide sleeve travel mm : 6.77
 Tolerance mm : +- 0.25
 Rated speed rpm : 610
 guide sleeve travel mm : 3.96
 Tolerance mm : +- 0.25
 Rated speed rpm : 1730

guide sleeve travel mm : 13.50
 Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1515
 Rack travel in mm : 14.50
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 178.0
 Tolerance cm³/1000 strokes : +- 1.0
 Check tolerance cm³/1000S. : +- 3.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 65.0
 tolerance degree : +- 4.0

control lever position degree : 122.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.40
 Rated speed rpm : 1410
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1585
 Tolerance 1/min : +- 15

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

control lever
position degree : 26.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 10.70

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 15.40
Tolerance mm : \pm 0.05

Rated speed rpm : 780
rack travel mm : 13.70
Tolerance mm : \pm 0.15

Rated speed rpm : 1000
rack travel mm : 14.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 15.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1500
rack travel mm : 15.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1300
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1300

Pressure hPa : 660
rack travel mm : 14.30
Tolerance mm : \pm 0.10

Pressure hPa : 520
rack travel mm : 13.10
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : > 270

Check speed 1/min : > 80
Check speed 1/min : > 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 780
Del. quantity cm³/1000 strokes : 154.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 5.0
Spread
Tolerance cm³/1000 strokes : 12.0
Check tolerance cm³/1000S. : 16.0

Aneroid pressure hPa : 1500
Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 165.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 136.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.40
Rated speed rpm : 1410
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 200.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : + 2.5
Check tolerance
cm3/1000S. : + 5.0
Spred
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 402 076 795

Injection pump
Pump designation : PES6P120A720RS3369
EP type number : 0 412 026 789

Governor
Governor design. : RSV450...1075P5A631
Governor no. : 0 421 833 538

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8365.26.584
Power KW : 144.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 10.75
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 136.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000s. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance cm³/1000s. : 9.0
Rated speed rpm : 450

Rack travel in mm : 5.90
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 25.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000s. : + - 6.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure hPa : 900
Del. quantity cm³/1000 strokes : 136.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000s. : + - 4.0
Spred
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000s. : 9.0

CONTROL LEVER

control lever position degree : 97.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 9.60
Rated speed rpm : 1150
Tolerance 1/min : + - 5
rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + - 15
rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400
rack travel mm : 4.00
Rated speed rpm : 1235

LOW IDLE

control lever position degree : 73.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.40

Testing:

Rated speed rpm : 450
rack travel mm : 5.90
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 650
Tolerance 1/min : + - 50

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 10.75
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 10.80
Tolerance mm : + - 0.10

Rated speed rpm : 320
rack travel mm : 11.30
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.75
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.60
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 515
rack travel mm : 10.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.96
Test oil : ISO 4113

Combination No. : 0 402 086 701

Injection pump
Pump designation : PES6P100B321RS3366
EP type number : 0 412 006 712

Governor
Governor design. : RSV400...1125P0A644
Governor no. : 0 421 833 557

Cust. part No. : 51.11103-7534

Customer-spec. information

Customer : MAN
Motor : D0826 LE531
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.50
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 194.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0
 Rated speed rpm : 400
 Rack travel in mm : 5.30
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spreed
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 194.0

Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 101.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.80
 Rated speed rpm : 1175
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1295
 Tolerance 1/min : + - 15
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1415
 rack travel mm : 4.00
 Rated speed rpm : 1300

LOW IDLE

control lever position degree : 77.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 4.70

Testing:

Rated speed rpm : 400
 rack travel mm : 5.30
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 525
 Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 14.50
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.80
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 14.15
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.50
Tolerance mm : \pm 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.45
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 181.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.55
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 617

Injection pump
Pump designation : PE6P130A320RS7282
EP type number : 0 412 636 825

Governor
Governor design. : RQV300...900PA1059
Governor no. : 0 421 814 049

Cust. part No. : 865851-P05 V.10.94

Customer-spec. information
Customer : PENTA
Motor : TAD 1230 P

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 8.30
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 352.0

Tolerance cm³/1000 strokes : + 1.5
 Check tolerance cm³/1000S. : + 5.0
 Spred
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spred
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.81
 Tolerance mm : + 0.25
 Rated speed rpm : 928
 guide sleeve
 travel mm : 7.72
 Tolerance mm : + 0.25
 Rated speed rpm : 650
 guide sleeve
 travel mm : 5.16
 Tolerance mm : + 0.25
 Rated speed rpm : 315
 guide sleeve
 travel mm : 1.98
 Tolerance mm : + 0.25
 Rated speed rpm : 365
 guide sleeve
 travel mm : 2.54

Tolerance mm : + 0.25
 Rated speed rpm : 420
 guide sleeve
 travel mm : 3.17
 Tolerance mm : + 0.25
 Rated speed rpm : 1210
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 980
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : 2000
 Del. quantity cm³/1000 strokes : 352.0
 Tolerance cm³/1000 strokes : + 1.5
 Check tolerance cm³/1000S. : + 5.0
 Spred
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

CONTROL LEVER

control lever
 position degree : 61.0
 tolerance degree : + 4.0
 control lever
 position degree : 117.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 915
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1000
 Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1100

Pressure hPa : 1420
rack travel mm : 11.30
Tolerance mm : \pm 0.05

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

rack travel mm : > 5.60
Rated speed rpm : 200

Rated speed rpm : 365

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 915
Tolerance 1/min : \pm 5

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.55
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 11.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.25
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 640
rack travel mm : 8.55
Tolerance mm : \pm 0.20

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113

Combination No. : 0 402 846 064

Injection pump
Pump designation : PE6P120A320RS8030
EP type number : 0 412 826 030

Governor
Governor design. : RQV300...1100PA1017
: -2
Governor no. : 0 421 814 102

Cust. part No. : 3825157-P04 v.05.96

Customer-spec. information

Customer : PENTA
Motor : TWD 1230 ME
Power KW : 275.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 8.10
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance _____
cm³/1000 strokes : + 1.0

Check tolerance _____
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance _____
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.41
Tolerance mm : + 0.25

Rated speed rpm : 1182
guide sleeve
travel mm : 8.71
Tolerance mm : + 0.25

Rated speed rpm : 834
guide sleeve
travel mm : 5.40
Tolerance mm : + 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : + 0.25

Rated speed rpm : 435

guide sleeve
travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250
Rack travel in mm : 9.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 46.0
tolerance degree : + 4.0

control lever
position degree : 112.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 1080
Tolerance 1/min : + 5
rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

rack travel mm : 3.50
Tolerance mm : + 0.20
Pressure hPa : 340
rack travel mm : 0.25
Tolerance mm : + 0.05

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 225

CRT mm min. : > 7.20

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1800
rack travel mm : 11.90
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.10
Tolerance mm : + 0.20

Rated speed rpm : 500
Pressure hPa : 1250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1080
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.10
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + 21.0
Check tolerance
cm³/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000s. : + 5.0
Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.96
Test oil : ISO 4113

Combination No. : 0 402 846 072

Injection pump
Pump designation : PE6P120A320RS8024
EP type number : 0 412 826 025

Governor
Governor design. : RQV250...1100PA1072
: -6K
Governor no. : 0 421 815 968

Cust. part No. : 8192537P01 v.04.96

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : D7A 275
Power KW : 202.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 7.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 212.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000s. : + 4.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000s. : 11.0
 Rated speed rpm : 300
 Rack travel in mm : 4.60
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : + 2.5
 Check tolerance cm³/1000s. : + 5.0
 Spread Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000s. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve travel mm : 2.15
 Tolerance mm : + 0.20
 Rated speed rpm : 1176
 guide sleeve travel mm : 10.16
 Tolerance mm : + 0.15
 Rated speed rpm : 733
 guide sleeve travel mm : 5.39
 Tolerance mm : + 0.25
 Rated speed rpm : 390
 guide sleeve travel mm : 3.22
 Tolerance mm : + 0.25
 Rated speed rpm : 1390
 guide sleeve travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1246
 Rack travel in mm : 12.75
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 212.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000s. : + 4.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000s. : 11.0

CONTROL LEVER

control lever position degree : 66.0
 tolerance degree : + 4.0

control lever position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1255
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1320

LOW IDLE

control lever position degree : 73.0

tolerance degree : + 4.0

control lever

position degree : 18.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 4.60

Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 13.70

Tolerance mm : + 0.05

Rated speed rpm : 650

rack travel mm : 12.30

Tolerance mm : + 0.20

Rated speed rpm : 300

rack travel mm : 10.90

Tolerance mm : + 0.30

ANEROID/ALTITUDE

COMPENSATOR TEST

SETTING

Rated speed rpm : 1100

Pressure hPa : 1500

rack travel mm : 13.70

Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1100

rack travel mm : 7.20

Tolerance mm : + 0.10

Rated speed rpm : 1100

Pressure hPa : 1130

rack travel mm : 6.10

Tolerance mm : + 0.20

Pressure hPa : 120

rack travel mm : 0.25

Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Rated speed rpm : 650

Del. quantity

cm³/1000 strokes : 226.0

Tolerance

cm³/1000 strokes : + 2.5

Check tolerance

cm³/1000S. : + 5.0

Spred

Tolerance

cm³/1000 strokes : 10.0

Check tolerance

cm³/1000S. : 14.0

Aneroid pressure

hPa : -

Rated speed rpm : 650

Del. quantity

cm³/1000 strokes : 105.0

Tolerance

cm³/1000 strokes : + 1.0

Check tolerance

cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 12.70

Rated speed rpm : 1165

Tolerance 1/min : + 5

LOW IDLE

Rated speed rpm : 300

Del. quantity

cm³/1000 strokes : 23.0

Tolerance

cm³/1000 strokes : + 2.5

Check tolerance

cm³/1000S. : + 5.0

Spred

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 402 896 015

Injection pump
Pump designation : PE6P120A320RS8033
EP type number : 0 412 826 031

Governor
Governor design. : RE30
Governor no. : 0 421 890 027

Cust. part No. : 425758 P04 v. 09/95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : DH 10 A
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4

Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20
Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 295.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 252.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Spread
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

Rated speed rpm : 950
Uact V : 2.200
Del. quantity
cm3/1000 strokes : 178.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 250
Uact V : 1.470
Tolerance Volt : +/- 0.060

Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.07.96
Test oil : ISO 4113

Combination No. : 0 402 896 018

Injection pump
Pump designation : PE6P130A320RS8046
EP type number : 0 412 836 011

Governor
Governor design. : RE30
Governor no. : 0 421 890 030

Cust. part No. : 3826196 P01 v.02/96

Customer-spec. information

Customer : PENTA
Motor : TAMD 122 EDC
Power KW : 450.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4

Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20
Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600
Uact V : 2.900
Del. quantity
cm3/1000 strokes : 337.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1125
Uact V : 2.900
Del. quantity
cm3/1000 strokes : 270.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Spread
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

Rated speed rpm : 900
Uact V : 1.600
Del. quantity
cm3/1000 strokes : 105.0
Tolerance
cm3/1000 strokes : +/- 4.0
Check tolerance
cm3/1000S. : +/- 6.0
Spread
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

TEST POINT L1

Rated speed rpm : 250
Uact V : 1.400
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 3.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 046

Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022

Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0 420 083 330

Cust. part No. : 0260746202

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 3.90

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000s. : +- 4.5

Spred
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000s. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 0.91

Tolerance mm : +- 0.25

Rated speed rpm : 1354

guide sleeve
travel mm : 7.15

Tolerance mm : +- 0.25

Rated speed rpm : 1130

guide sleeve
travel mm : 5.40

Tolerance mm : +- 0.25

Rated speed rpm : 610

guide sleeve
travel mm : 2.96

Tolerance mm : +- 0.25

Rated speed rpm : 660

guide sleeve
travel mm : 3.31

Tolerance mm : +- 0.25

Rated speed rpm : 780

guide sleeve
travel mm : 3.72

Tolerance mm : +- 0.25

Rated speed rpm : 1679

guide sleeve
travel mm : 12.00

Tolerance mm : +- 0.25

Rated speed rpm : 1780

guide sleeve
travel mm : 13.50

Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1445

Rack travel in mm : 10.00

Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000s. : +- 4.0

Spred
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 113.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1345

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1475

Tolerance 1/min : +- 15

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 2.20
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Def. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 047

Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022

Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0 420 083 330

Cust. part No. : 0260746302

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance cm³/1000s. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 12.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000s. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 2.0
 Check tolerance cm³/1000s. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve travel mm : 0.91
 Tolerance mm : + - 0.25
 Rated speed rpm : 1354
 guide sleeve travel mm : 7.15
 Tolerance mm : + - 0.25
 Rated speed rpm : 1130
 guide sleeve travel mm : 5.40
 Tolerance mm : + - 0.25
 Rated speed rpm : 610
 guide sleeve travel mm : 2.96
 Tolerance mm : + - 0.25
 Rated speed rpm : 660
 guide sleeve travel mm : 3.31
 Tolerance mm : + - 0.25
 Rated speed rpm : 780
 guide sleeve travel mm : 3.72
 Tolerance mm : + - 0.25
 Rated speed rpm : 1679
 guide sleeve travel mm : 12.00

Tolerance mm : + - 0.25
 Rated speed rpm : 1780
 guide sleeve travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1445
 Rack travel in mm : 10.00
 Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 119.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000s. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000s. : 8.0

CONTROL LEVER

control lever position degree : 113.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : + - 15
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : + - 0.10

Rated speed rpm : 200
CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 2.20
Tolerance mm : + - 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : + - 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000s. : + - 8.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 050

Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022

Governor
Governor design. : RQV300...1200MW132
: -14
Governor no. : 0 420 083 331

Cust. part No. : 0260747502

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : + - 0.10

Del. quantity cm³/1000 strokes : 12.0

Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000S. : + - 4.5

Spread
Tolerance cm³/1000 strokes : 2.0

Check tolerance cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve travel mm : 0.91
Tolerance mm : + - 0.20

Rated speed rpm : 1254
guide sleeve travel mm : 7.92
Tolerance mm : + - 0.15

Rated speed rpm : 970
guide sleeve travel mm : 5.51
Tolerance mm : + - 0.25

Rated speed rpm : 1690
guide sleeve travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.00
Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 119.0

Tolerance cm³/1000 strokes : + - 1.0

Check tolerance cm³/1000S. : + - 4.0

Spread
Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 115.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1245
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1390
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1500

LOW IDLE

control lever position degree : 74.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.30

Tolerance mm : \pm 0.05
Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 2.20
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0
Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 051

Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022

Governor
Governor design. : RQV300...1200MW132
: -14
Governor no. : 0 420 083 331

Cust. part No. : 0260747402

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 0.91

Tolerance mm : + - 0.20

Rated speed rpm : 1255

guide sleeve
travel mm : 7.93

Tolerance mm : + - 0.15

Rated speed rpm : 970

guide sleeve
travel mm : 5.51

Tolerance mm : + - 0.25

Rated speed rpm : 1690

guide sleeve
travel mm : 13.50

Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.00

Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 115.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1245

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1390

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1500

LOW IDLE

control lever

position degree : 74.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.90

Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 13.30

Tolerance mm : \pm 0.05
Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 2.20
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 120.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 5.0
Spread
Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 9.0
Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 66.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 150.0
Tolerance cm³/1000 strokes : \pm 5.0
Check tolerance cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 12.0
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 4.5
Spread
Tolerance cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.96
Test oil : ISO 4113

Combination No. : 0 403 244 055

Injection pump
Pump designation : PES4MW100/320RS1521
EP type number : 0 413 204 020

Governor
Governor design. : RQV400...1200MW147
: -1
Governor no. : 0 420 083 336

Cust. part No. : 51.11103-7532

Customer-spec. information

Customer : MAN
Motor : D0824 LFL04
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 8.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.20
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400

guide sleeve
travel mm : 1.56

Tolerance mm : + 0.20

Rated speed rpm : 1263

guide sleeve
travel mm : 9.98

Tolerance mm : + 0.15

Rated speed rpm : 868

guide sleeve
travel mm : 5.72

Tolerance mm : + 0.25

Rated speed rpm : 560

guide sleeve
travel mm : 3.27

Tolerance mm : + 0.25

Rated speed rpm : 1500

guide sleeve
travel mm : 13.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 121.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20

Rated speed rpm : 1253

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1335

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 78.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 400

rack travel mm : 4.90

Tolerance mm : + 0.10

Rated speed rpm : 300

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.20
Tolerance mm : + - 0.05

Rated speed rpm : 1200
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 650
rack travel mm : 12.20
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.20
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 1.60
Tolerance mm : + - 0.10

Pressure hPa : 130
rack travel mm : 0.30
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 129.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 5.0

Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

Aneroid pressure
hPa : 800
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 139.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 93.0
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1253
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 110.0
Tolerance
cm3/1000 strokes : + - 5.0
Check tolerance
cm3/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.96
Test oil : ISO 4113

Combination No. : 0 403 444 151

Injection pump
Pump designation : PES4MW100/720RS1235
EP type number : 0 413 404 121

Governor
Governor design. : RQV300...1300MW139
Governor no. : 0 420 083 304

Cust. part No. : 0250742602

Customer-spec. information

Customer : MB-NFZ
Motor : OM364A
Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.70
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 300

Rack travel in mm : 8.15

Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000s. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 1.27

Tolerance mm : + - 0.25

Rated speed rpm : 1354

guide sleeve
travel mm : 10.31

Tolerance mm : + - 0.25

Rated speed rpm : 894

guide sleeve
travel mm : 6.18

Tolerance mm : + - 0.25

Rated speed rpm : 390

guide sleeve
travel mm : 2.39

Tolerance mm : + - 0.25

Rated speed rpm : 440

guide sleeve
travel mm : 3.01

Tolerance mm : + - 0.25

Rated speed rpm : 510

guide sleeve
travel mm : 3.56

Tolerance mm : + - 0.25

Rated speed rpm : 1600

guide sleeve
travel mm : 13.50

Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 10.00

Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 700

Det. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000s. : + - 3.0

Spred
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 118.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.15

Rated speed rpm : 1345

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1455

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 76.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.15
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 9.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 0.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check speed 1/min : $>$ 80

Check speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 78.0
Tolerance cm³/1000 strokes : \pm 1.5
Check tolerance cm³/1000S. : \pm 4.0
Spread
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 7.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 49.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.15
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 90.0
Tolerance cm³/1000 strokes : \pm 5.0
Check tolerance cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 403 476 132

Injection pump
Pump designation : PES6MW100/320RS1132
: -1
EP type number : 0 413 406 230

Governor
Governor design. : RSV325...1200MWOA359
: -1
Governor no. : 0 420 085 241

Cust. part No. :

Customer-spec. information

Customer : PENTA
Motor : TD 630ME
Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.65
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 116.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 3.0
 Spred Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 6.0
 Rated speed rpm : 325
 Rack travel in mm : 6.00
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 14.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.5
 Spred Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring pre-tension
 click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 116.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spred Tolerance cm³/1000 strokes : 3.5

Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 96.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
 Rated speed rpm : 1230
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1285
 Tolerance 1/min : + 10

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1350

rack travel mm : 4.00
 Rated speed rpm : 1295

LOW IDLE

control lever position degree : 69.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 5.50

Testing:

Rated speed rpm : 325
 rack travel mm : 6.00
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 490
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.65
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1000
rack travel mm : 12.65
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 700
rack travel mm : 10.55
Tolerance mm : +- 0.05

Rated speed rpm : 700

Pressure hPa : 610
rack travel mm : 12.45
Tolerance mm : +- 0.15

Pressure hPa : 270
rack travel mm : 10.75
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1230
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 13.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.96
Test oil : ISO 4113

Combination No. : 9 400 085 395

Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039

Governor
Governor design. : RQV300...1300AB1312L
Governor no. : 9 420 080 391

Cust. part No. : 0260749702

Customer-spec. information

Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 109.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1515
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 8.80

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.25
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 1240
rack travel mm : 12.25
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 2.40
Tolerance mm : + - 0.10

Pressure hPa : 410
rack travel mm : 1.35
Tolerance mm : + - 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 111.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 4.0

Aneroid pressure hPa : 1200
Rated speed rpm : 950
Del. quantity cm³/1000 strokes : 111.5
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 108.5
Tolerance cm³/1000 strokes : + - 7.5
Check tolerance cm³/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 900

Injection pump
Pump designation : PES6P120A120RS7351
EP type number : 0 412 726 922

Governor
Governor design. : RQV350...1100PA1173
: -3K
Governor no. : 0 421 815 505

Cust. part No. : 3931335

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 244.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.75
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 250.5
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 375
 Rack travel in mm : 6.90
 Tolerance mm : + 0.20
 Del. quantity cm³/1000 strokes : 24.5
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 5.0
 Spreed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 2.11
 Tolerance mm : + 0.20
 Rated speed rpm : 1273
 guide sleeve travel mm : 8.91
 Tolerance mm : + 0.15
 Rated speed rpm : 781
 guide sleeve travel mm : 5.08
 Tolerance mm : + 0.25
 Rated speed rpm : 420
 guide sleeve travel mm : 3.10
 Tolerance mm : + 0.25

Rated speed rpm : 1640
 guide sleeve travel mm : 13.50
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 250.5
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 115.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.20
 Rated speed rpm : 1250
 Tolerance 1/min : + 15

rack travel mm : 7.50
 Rated speed rpm : 1355
 Tolerance 1/min : + 5

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever position degree : 71.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 375
 rack travel mm : 6.90
 Tolerance mm : + 0.20

Rated speed rpm : 250
CRT mm min. : > 7.50
Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.75
Tolerance mm : + - 0.05

Rated speed rpm : 650
rack travel mm : 14.50
Tolerance mm : + - 0.20

Rated speed rpm : 1200
rack travel mm : 15.30
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 14.70
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.30
Tolerance mm : + - 0.20

Rated speed rpm : 1100

Pressure hPa : 765
rack travel mm : 13.60
Tolerance mm : + - 0.20

Pressure hPa : 330
rack travel mm : 10.60
Tolerance mm : + - 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 290

Check speed 1/min : > 80
Check speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 236.5
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 1100
Del. quantity cm³/1000 strokes : 90.5
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 1250
Tolerance 1/min : + - 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : + - 0.50
Del. quantity cm³/1000 strokes : 191.5
Tolerance cm³/1000 strokes : + - 20.0
Check tolerance cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 5.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 403 466 149

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1100MW2A365
Governor no. : 0 420 085 248

Cust. part No. : 3926876

Customer-spec. information

Customer : CDC
Motor : 6 CT
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

 Rack travel in mm : 10.15
 Tolerance mm : \pm 0.05

 Del. quantity cm³/1000 strokes : 121.5

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spred
 Tolerance cm³/1000 strokes : 4.0

 Check tolerance cm³/1000S. : 7.5

 Rated speed rpm : 500

 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 29.0
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 4.5
 Spred
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure hPa : 900
 Del. quantity cm³/1000 strokes : 121.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.10
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 5.50
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1350

rack travel mm : 5.50
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 89.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.15
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 11.10
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.50
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 10.90
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1165
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 19.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 176

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1100MW2A402
Governor no. : 0 420 085 292

Cust. part No. : 3931934

Customer-spec. information

Customer : CDC
Motor : 6 CT
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1100
 Rack travel in mm : 10.15
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 122.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5
 Rated speed rpm : 500
 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 29.0
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 4.5
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 122.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever position degree : 108.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.10
 Rated speed rpm : 1165
 Tolerance 1/min : \pm 5
 rack travel mm : 5.60
 Rated speed rpm : 1230
 Tolerance 1/min : \pm 5
 rack travel mm : 1.00
 Tolerance mm : \pm 0.70
 Rated speed rpm : 1350
 rack travel mm : 5.60
 Rated speed rpm : 1230

LOW IDLE

control lever position degree : 89.0
 tolerance degree : \pm 4.0
 Setting point w/out bumper spring

Rated speed rpm : 500
 rack travel mm : 5.00

Testing:

Rated speed rpm : 500
 rack travel mm : 5.50
 Tolerance mm : \pm 0.10
 Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.15
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 10.40
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 130.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1165
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 401 840 749

Injection pump
Pump designation : PE12P110A320LS3837
: -1
EP type number : 0 411 810 710

Governor
Governor design. : RQV350...1150PA378
: -1
Governor no. : 0 421 813 349

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 424
Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 160
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.45
 Tolerance mm : \pm 0.05
 Del. quantity
 cm³/1000 strokes : 123.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 350
 Rack travel in mm : 7.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1200

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 64.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
 Rated speed rpm : 1175
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1250
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 19.0
 tolerance degree : \pm 3.0

Testing:

Rated speed rpm : 350
 rack travel mm : 7.50
 Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 1150
 rack travel mm : 11.45
 Tolerance mm : \pm 0.05

Rated speed rpm : 600
 rack travel mm : 11.45

Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 600

Del. quantity cm3/1000 strokes : 98.0

Tolerance cm3/1000 strokes : + 2.0

Check tolerance cm3/1000S. : + 5.0

Spred
Tolerance cm3/1000 strokes : 6.0

Check tolerance cm3/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 1150

Del. quantity cm3/1000 strokes : 92.0

Tolerance cm3/1000 strokes : + 2.0

Check tolerance cm3/1000S. : + 5.0

Spred
Tolerance cm3/1000 strokes : 6.0

Check tolerance cm3/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1175
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 135.0
Tolerance cm3/1000 strokes : + 5.0
Check tolerance cm3/1000S. : + 9.0

LOW IDLE

Rated speed rpm : 350
Del. quantity cm3/1000 strokes : 17.0

Tolerance cm3/1000 strokes : + 3.0

Check tolerance cm3/1000S. : + 5.5

Spred
Tolerance cm3/1000 strokes : 4.0

Check tolerance cm3/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113

Combination No. : 0 402 046 868

Injection pump
Pump designation : PES6P110A320RS3349
EP type number : 0 412 016 753

Governor
Governor design. : RQV350...1400PA1267K
Governor no. : 0 421 815 503

Cust. part No. : 16700-D8810

Customer-spec. information

Customer : NMI
Motor : M 3.6 TI L
Power KW : 117.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.50
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 134.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 9.50
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 28.0
 Tolerance cm³/1000 strokes : + - 2.5
 Check tolerance cm³/1000S. : + - 5.0
 Spred
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.46
 Tolerance mm : + - 0.20
 Rated speed rpm : 1421
 guide sleeve
 travel mm : 10.03
 Tolerance mm : + - 0.15
 Rated speed rpm : 996
 guide sleeve
 travel mm : 6.78
 Tolerance mm : + - 0.25
 Rated speed rpm : 610
 guide sleeve
 travel mm : 3.96
 Tolerance mm : + - 0.25

Rated speed rpm : 1730
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1545
 Rack travel in mm : 11.50
 Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 134.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 64.0
 tolerance degree : + - 4.0
 control lever
 position degree : 122.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.50
 Rated speed rpm : 1410
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1540
 Tolerance 1/min : + - 15
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

control lever
position degree : 27.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 10.50

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 780
rack travel mm : 11.70
Tolerance mm : \pm 0.15

Rated speed rpm : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : < 200
Rated speed rpm : > 270

Check speed 1/min : < 180
Check speed 1/min : > 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 780
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1410
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 748

Injection pump
Pump designation : PES6P110A720RS3305
: -1
EP type number : 0 412 016 742

Governor
Governor design. : RSV300...1100P1A555
Governor no. : 0 421 833 379

Cust. part No. : 9271058

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 165.0

Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.5
 Spreed Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.5
 Rated speed rpm : 400
 Rack travel in mm : 4.40
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 36.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 5.5
 Spreed Tolerance cm³/1000 strokes : 4.5
 Check tolerance cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure hPa : 1100
 Del. quantity cm³/1000 strokes : 165.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.5
 Spreed Tolerance cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever position degree : 108.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.25
 Rated speed rpm : 1040
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1095
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1260

rack travel mm : 4.00
 Rated speed rpm : 1100

LOW IDLE

control lever position degree : 78.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 3.90

Testing:

Rated speed rpm : 400
 rack travel mm : 4.40
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1000
 rack travel mm : 11.25
 Tolerance mm : + 0.05

Rated speed rpm : 600

rack travel mm : 11.25
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : + - 0.10

Rated speed rpm : 450
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 400
rack travel mm : 12.20
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1100
rack travel mm : 11.25
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 9.75
Tolerance mm : + - 0.10

Rated speed rpm : 550

Pressure hPa : 650
rack travel mm : 11.00
Tolerance mm : + - 0.05

Pressure hPa : 550
rack travel mm : 10.25
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 152.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 3.5

BREAKAWAY

Rack travel in mm : 10.25
Rated speed rpm : 1040
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000s. : + - 14.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 5.5
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 797

Injection pump
Pump designation : PES6P120A720RS3371
EP type number : 0 412 026 791

Governor
Governer design. : RSV450...1000P5A637
Governer no. : 0 421 833 548

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.541
Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 240
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 9.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 125.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 450
 Rack travel in mm : 4.20
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring pre-tension click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 125.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spred Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 102.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.00
 Rated speed rpm : 1070
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1115
 Tolerance 1/min : + 15
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1400
 rack travel mm : 4.00
 Rated speed rpm : 1125

LOW IDLE

control lever position degree : 80.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
 rack travel mm : 3.70

Testing:

Rated speed rpm : 450
 rack travel mm : 4.20
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 560
 Tolerance 1/min : + 50

TORQUE CONTROL

Rated speed rpm : 1000
 rack travel mm : 9.00
 Tolerance mm : + 0.05

Rated speed rpm : 500

rack travel mm : 9.05
Tolerance mm : \pm 0.10

Rated speed rpm : 330
rack travel mm : 9.60
Tolerance mm : \pm 0.20

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 8.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 807

Injection pump
Pump designation : PES6P120A720RS3378
EP type number : 0 412 026 799

Governor
Governor design. : RSV450...1050P5A647
Governor no. : 0 421 833 564

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.532
Power KW : 117.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 260
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 8.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 112.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.60
 Tolerance mm : + - 0.10

Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : + - 3.0

Check tolerance
 cm³/1000S. : + - 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + - 0.20

governor spring
 pre-tension
 click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 112.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 98.0

RATED SPEED

rack travel mm : 7.40
 Rated speed rpm : 1095
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : + - 15

rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1130

LOW IDLE

control lever
 position degree : 76.0

Setting point w/out bumper spring

Rated speed rpm : 450
 rack travel mm : 4.10

Testing:

Rated speed rpm : 450
 rack travel mm : 4.60
 Tolerance mm : + - 0.10

rack travel mm : 2.00
 Rated speed rpm : 570
 Tolerance 1/min : + - 50

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 8.45
 Tolerance mm : + - 0.05

Rated speed rpm : 700
 rack travel mm : 8.50
 Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 99.5

BREAKAWAY

Rack travel in mm : 7.40
Rated speed rpm : 1095
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 402 640 827

Injection pump
Pump designation : PE12P120A520LS7826
EP type number : 0 412 620 817

Governor
Governor design. : RQV350...1000PA870
: -12
Governor no. : 0 421 813 933

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 550.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1100

Rack travel in mm : 12.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 7.30

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400
Rated speed rpm : 500
rack travel mm : 1.25
Tolerance mm : + - 0.05

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 3.00
Tolerance mm : + - 0.10

START CUT-OUT

Rated speed rpm : > 200
Rated speed rpm : < 290

Check speed 1/min : > 180
Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1600
Del. quantity cm3/1000 strokes : 235.5
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spred
Tolerance cm3/1000 strokes : 10.0
Check tolerance cm3/1000S. : 15.0

Aneroid pressure hPa : -
Del. quantity cm3/1000 strokes : 125.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 4.0

Spred
Tolerance cm3/1000 strokes : 10.0
Check tolerance cm3/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1045
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 340.0
Tolerance cm3/1000 strokes : + - 10.0
Check tolerance cm3/1000S. : + - 14.0

LOW IDLE

Del. quantity cm3/1000 strokes : 19.0
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spred
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 402 640 828

Injection pump
Pump designation : PE12P120A520LS7826
EP type number : 0 412 620 817

Governor
Governor design. : RQV350...1050PA870
: -13
Governor no. : 0 421 813 934

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 620.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 275.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure

hPa : 1800

Del. quantity
cm³/1000 strokes : 275.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER
control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE
control lever
position degree : 63.0
tolerance degree : \pm 4.0

Testing:
Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 7.30

Rated speed rpm : 475

TORQUE CONTROL
Rated speed rpm : 1050
rack travel mm : 14.05
Tolerance mm : \pm 0.05
Rated speed rpm : 750
rack travel mm : 14.05

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 1.45
Tolerance mm : \pm 0.05

Pressure hPa : 900
rack travel mm : 4.85
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : > 200
Rated speed rpm : < 310

Check speed 1/min : > 180
Check speed 1/min : < 330

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1800
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 272.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread
Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 125.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0
Spread

Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 340.0
Tolerance cm³/1000 strokes : \pm 10.0
Check tolerance cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 19.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 402 640 829

Injection pump
Pump designation : PE12P120A520LS7826
EP type number : 0 412 620 817

Governor
Governor design. : RQV350...900PA870
: -14
Governor no. : 0 421 813 935

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 500.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 160
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.95

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 237.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0
 Rated speed rpm : 350
 Rack travel in mm : 5.60
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.55
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1120
 guide sleeve travel mm : 11.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 655
 guide sleeve travel mm : 5.05
 Tolerance mm : \pm 0.25
 Rated speed rpm : 960
 guide sleeve travel mm : 8.95

Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 950
 Rack travel in mm : 16.50
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure hPa : 1600
 Del. quantity cm³/1000 strokes : 237.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

CONTROL LEVER

control lever position degree : 122.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
 Rated speed rpm : 945
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1025
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 66.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 7.30

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.95
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.95
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400
Rated speed rpm : 500
rack travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 2.90
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 200
Rated speed rpm : < 310

Check speed 1/min : > 180
Check speed 1/min : < 330

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1600
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 232.0
Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000S. : + 5.0
Spread Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 125.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0
Spread Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 945
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 340.0
Tolerance cm³/1000 strokes : + 10.0
Check tolerance cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 19.0
Tolerance cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RQV350...1050PA1318
Governor no. : 0 421 814 185

Cust. part No. : 0270746302

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.30
Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 272.0

 Tolerance
 cm³/1000 strokes : + - 1.0

 Check tolerance
 cm³/1000S. : + - 4.0

 Spread
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 350

 Rack travel in mm : 5.80
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.48
 Tolerance mm : + - 0.20

 Rated speed rpm : 1106
 guide sleeve
 travel mm : 8.02
 Tolerance mm : + - 0.15

 Rated speed rpm : 900
 guide sleeve
 travel mm : 5.69
 Tolerance mm : + - 0.25

 Rated speed rpm : 580
 guide sleeve
 travel mm : 3.62
 Tolerance mm : + - 0.25

Rated speed rpm : 1204
 guide sleeve
 travel mm : 10.00
 Tolerance mm : + - 0.25

Rated speed rpm : 1300
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1174
 Rack travel in mm : 11.00
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1800
 Del. quantity
 cm³/1000 strokes : 272.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 120.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 14.30
 Rated speed rpm : 1095
 Tolerance 1/min : + - 5

 rack travel mm : 4.00
 Rated speed rpm : 1155
 Tolerance 1/min : + - 15

 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 8.36

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.30
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : 0.20
Tolerance mm : \pm 0.05

Pressure hPa : 700
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance : 10.0
cm³/1000s.

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 402 648 787

Injection pump
Pump designation : PE8P120A320LS7899
EP type number : 0 412 628 916

Governor
Governor design. : RQV350...1050PA1308
Governor no. : 0 421 814 181

Cust. part No. : 0250742502

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 405.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + - 0.1

Overflow quantity
min. l/h : 90
Tolerance l/h : + - 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 4.75
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 20.50
Tolerance mm : + - 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + - 0.30
Check
tolerance °NW : + - 0.50

Start of delivery mark

Tolerance : + - 0.10
Check
tolerance °NW : + - 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.00

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 282.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 5.70
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.05
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1111
 guide sleeve
 travel mm : 8.58
 Tolerance mm : \pm 0.15
 Rated speed rpm : 1640
 guide sleeve
 travel mm : 25.13
 Tolerance mm : \pm 0.25
 Rated speed rpm : 830
 guide sleeve
 travel mm : 6.20

Tolerance mm : \pm 0.25
 Rated speed rpm : 1183
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1280
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1136
 Rack travel in mm : 13.50
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1300
 Del. quantity cm³/1000 strokes : 282.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 121.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.00
 Rated speed rpm : 1098
 Tolerance 1/min : \pm 8
 rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : \pm 15
 rack travel mm : 0.75
 Tolerance mm : \pm 0.75
 Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 7.50
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 15.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST**MEASUREMENT**

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 1.40
Tolerance mm : \pm 0.05

Pressure hPa : 1000
rack travel mm : 6.00
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 210
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 190

Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113

Combination No. : 0 402 676 831

Injection pump
Pump designation : PE6P120A320LS7895
EP type number : 0 412 626 955

Governor
Governor design. : RSV600...1050POA642
Governor no. : 0 421 833 556

Cust. part No. : 0270748402

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 14.20
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 251.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 600
 Rack travel in mm : 4.20
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 17.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 251.0
 Tolerance cm³/1000 strokes : \pm 1.0

Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 93.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.20
 Rated speed rpm : 1115
 Tolerance 1/min : \pm 5

LOW IDLE

control lever position degree : 77.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 600
 rack travel mm : 4.20
 Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1075
 rack travel mm : 14.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 800
 rack travel mm : 15.25
 Tolerance mm : \pm 0.10

Rated speed rpm : 1000
 rack travel mm : 14.85
 Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1115
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.75
Tolerance mm : + - 0.25
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 888

Injection pump
Pump designation : PES6P120A120RS7390
EP type number : 0 412 726 945

Governor
Governor design. : RQV350...1100PA1237K
Governor no. : 0 421 815 475

Cust. part No. : 3283278

Customer-spec. information

Customer : CUMMINS
Motor : 6CTAA
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

°NW after s.o.d. : 7.70
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.30

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 164.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 18.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.93
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1159
 guide sleeve travel mm : 10.27
 Tolerance mm : \pm 0.15
 Rated speed rpm : 710
 guide sleeve travel mm : 5.79
 Tolerance mm : \pm 0.25
 Rated speed rpm : 420
 guide sleeve travel mm : 4.28

Tolerance mm : \pm 0.25
 Rated speed rpm : 1380
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1200
 Rack travel in mm : 12.30
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 164.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 69.0
 tolerance degree : \pm 4.0

control lever position degree : 123.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1145
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 7.70

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.95
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 13.05
Tolerance mm : \pm 0.15

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100

rack travel mm : 10.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 170
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 330
rack travel mm : 12.80
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000s. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump
Pump designation : PES6P120A120RS7390
EP type number : 0 412 726 945

Governor
Governor design. : RQV350...1100PA1244K
Governor no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 90
Tolerance l/h : + - 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 3.30
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 20.50
Tolerance mm : + - 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.30
Check
tolerance °NW : + - 0.50

Start of delivery blocking

°NW after s.o.d. : 7.70
Tolerance : + - 0.10
Check
tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 173.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 4.60
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 18.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spred
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.93
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1159
 guide sleeve travel mm : 10.27
 Tolerance mm : \pm 0.15
 Rated speed rpm : 710
 guide sleeve travel mm : 5.79
 Tolerance mm : \pm 0.25
 Rated speed rpm : 420
 guide sleeve travel mm : 4.28

Tolerance mm : \pm 0.25
 Rated speed rpm : 1380
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50
 GUIDE SLEEVE POSITION
 Rated speed rpm : 1195
 Rack travel in mm : 12.00
 Tolerance mm : \pm 2.00
 FULL LOAD DELIVERY AT FULL LOAD STOP
 Rated speed rpm : 1100
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 173.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 68.0
 tolerance degree : \pm 4.0

control lever position degree : 122.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
 Rated speed rpm : 1145
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 7.50

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 700
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 700

Pressure hPa : 140
rack travel mm : 11.85
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

ECAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : + - 20.0
Check tolerance
cm3/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 5.0
Spred
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1100PA1244
: -1K
Governor no. : 0 421 815 488

Cust. part No. : 3282610

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 221.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

Start of delivery blocking

°NW after s.o.d. : 7.70
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.30

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 209.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 5.40
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.93
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1159
 guide sleeve travel mm : 10.28
 Tolerance mm : \pm 0.15
 Rated speed rpm : 710
 guide sleeve travel mm : 5.80
 Tolerance mm : \pm 0.25
 Rated speed rpm : 430
 guide sleeve travel mm : 4.33

Tolerance mm : \pm 0.25
 Rated speed rpm : 1380
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1200
 Rack travel in mm : 14.30
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 209.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 66.0
 tolerance degree : \pm 4.0

control lever position degree : 120.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
 Rated speed rpm : 1145
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1255
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 8.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.90
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : \pm 0.15

Rated speed rpm : 600
rack travel mm : 14.80
Tolerance mm : \pm 0.15

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 15.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100

rack travel mm : 11.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 880
rack travel mm : 13.75
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 11.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.96
Test oil : ISO 4113

Combination No. : 0 403 244 045A

Injection pump
Pump designation : PES4MW100/720RS1524
EP type number : 0 413 204 021

Governor
Governor design. : RQV300...1300MW132
: -12
Governor no. : 0 420 083 329

Cust. part No. : 0240740902

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 13.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0
Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : + - 0.20

Rated speed rpm : 1353
guide sleeve
travel mm : 7.14
Tolerance mm : + - 0.15

Rated speed rpm : 1130
guide sleeve
travel mm : 5.40
Tolerance mm : + - 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 3.72
Tolerance mm : + - 0.25

Rated speed rpm : 1679
guide sleeve
travel mm : 12.00
Tolerance mm : + - 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1646
Rack travel in mm : 9.90
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1345
Tolerance 1/min : + - 10

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : + - 0.10

Rated speed rpm : 200
CRT mm min. : > 4.61

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 13.00
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 13.00
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.00
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : + - 0.10

Pressure hPa : 150
rack travel mm : 0.30
Tolerance mm : + - 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check speed 1/min : > 80
Check speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700
Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 82.0
Tolerance cm3/1000 strokes : + - 1.5
Check tolerance cm3/1000S. : + - 4.0
Spread
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 9.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 56.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1345
Tolerance 1/min : + - 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 120.0
Tolerance cm3/1000 strokes : + - 5.0
Check tolerance cm3/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm3/1000 strokes : 12.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread
Tolerance cm3/1000 strokes : 2.0
Check tolerance cm3/1000S. : 4.0

End of test specification sheet

H07

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.96
Test oil : ISO 4113

Combination No. : 0 403 474 006

Injection pump
Pump designation : PES4MW100/720RS1127
EP type number : 0 413 404 103

Governor
Governor design. : RSV350...1300MW0A322
: -1
Governor no. : 0 420 085 093

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 83.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.60

Tolerance mm : + - 0.15

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : + - 2.0

Check tolerance

cm³/1000s. : + - 4.5

Spred

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + - 0.35

governor spring

pre-tension

click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 83.0

Tolerance

cm³/1000 strokes : + - 1.0

Check tolerance

cm³/1000s. : + - 3.0

Spred

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1550

rack travel mm : 4.00
Rated speed rpm : 1445

LOW IDLE

control lever
position degree : 86.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.60
Tolerance mm : + - 0.15

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : + - 0.10

Rated speed rpm : 585
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 11.20
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 750

Del. quantity

cm³/1000 strokes : 79.0

Tolerance

cm³/1000 strokes : + - 1.0

Check tolerance

cm³/1000S. : + - 3.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 7.0

Aneroid pressure

hPa : -

Rated speed rpm : 585

Del. quantity

cm³/1000 strokes : 75.0

Tolerance

cm³/1000 strokes : + - 1.5

Check tolerance

cm³/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 10.10

Rated speed rpm : 1345

Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm³/1000 strokes : 83.0

Tolerance

cm³/1000 strokes : + - 5.0

Check tolerance

cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 350

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : + - 2.0

Check tolerance

cm³/1000S. : + - 4.5

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.08.96
Test oil : ISO 4113

Combination No. : 9 400 085 385EE

Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039

Governor
Governor design. : RQV300...1300AB1306L
Governor no. : 9 420 080 384

Cust. part No. : 0260745502

Customer-spec. information

Customer : MBB
Motor : OM 366 A
Power KW : . . .

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 83.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300
 Rack travel in mm : 8.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 10.5
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spred
 Tolerance
 cm3/1000 strokes : 5.5
 Check tolerance
 cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : \pm 0.05
 Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : \pm 0.25
 Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900

Del. quantity
 cm3/1000 strokes : 83.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spred
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : \pm 4.0
 control lever
 position degree : 109.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.80
 Rated speed rpm : 1355
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1485
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : \pm 4.0
 control lever
 position degree : 22.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.00
 Tolerance mm : \pm 0.10
 Rated speed rpm : 100
 CRT mm min. : $>$ 8.60

Rated speed rpm : 200
 CRT mm max. : > 8.60
 Rated speed rpm : 375

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 240

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 10.85
 Tolerance mm : ± 0.05

Rated speed rpm : 700
 rack travel mm : 11.75
 Tolerance mm : ± 0.05

Rated speed rpm : 1000
 rack travel mm : 11.15
 Tolerance mm : ± 0.05

Rated speed rpm : 600
 rack travel mm : 11.85
 Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 900
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 82.5
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 42.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 900
 rack travel mm : 11.85
 Tolerance mm : ± 0.05

BREAKAWAY

Rack travel in mm : 9.80
 Rated speed rpm : 1355
 Tolerance 1/min : ± 5

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 250
 rack travel mm : 0.60
 Tolerance mm : ± 0.10

Pressure hPa : 450
 rack travel mm : 1.75
 Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 13.80
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : ± 7.5
 Check tolerance
 cm³/1000S. : ± 10.0

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 220

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 10.5
 Tolerance
 cm³/1000 strokes : ± 2.0

Check tolerance : +- 4.5
cm³/1000S.
Spred
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.05.96
Test oil : ISO 4113

Combination No. : 9 400 087 500

Injection pump
Pump designation : PES6P120A720LS7257
: -10
EP type number : 9 400 087 086

Governor
Governor design. : RQV300...950PA1242
Governor no. : 9 420 080 387

Cust. part No. : 0260746602

Customer-spec. information

Customer : MBB
Motor : OM 447 LA
Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.65
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 275.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.50
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 16.5
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1050
 guide sleeve travel mm : 7.80
 Tolerance mm : + - 0.10

Rated speed rpm : 700
 guide sleeve travel mm : 5.45
 Tolerance mm : + - 0.25

Rated speed rpm : 300
 guide sleeve travel mm : 0.75
 Tolerance mm : + - 0.25

Rated speed rpm : 500
 guide sleeve travel mm : 3.55
 Tolerance mm : + - 0.25

Rated speed rpm : 1165
 guide sleeve travel mm : 9.45
 Tolerance mm : + - 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1120
 Rack travel in mm : 16.50
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure hPa : 1300
 Del. quantity cm³/1000 strokes : 275.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 52.0
 tolerance degree : + - 4.0

control lever position degree : 117.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1000
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1125
 Tolerance 1/min : + - 15

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1230

LOW IDLE

control lever position degree : 82.0
 tolerance degree : + - 4.0

control lever position degree : 17.0
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 9.20

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 840
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 760
rack travel mm : 2.25
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 0.90
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 220
Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1300
Rated speed rpm : 950
Del. quantity cm³/1000 strokes : 245.5
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : 1300
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 265.5
Tolerance cm³/1000 strokes : \pm 2.0
Check tolerance cm³/1000S. : \pm 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 146.5
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0
Spread
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 12.60

Rated speed rpm : 1000
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 236.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 16.5
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.08.96
Test oil : ISO 4113

Combination No. : 0 402 746 612

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1300PA1282K
Governor no. : 0 421 815 515

Cust. part No. : 3866784

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.65
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 164.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 7.00
 Tolerance mm : + - 0.20
 Del. quantity cm³/1000 strokes : 28.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 5.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve travel mm : 1.39
 Tolerance mm : + - 0.20
 Rated speed rpm : 1355
 guide sleeve travel mm : 8.32
 Tolerance mm : + - 0.15
 Rated speed rpm : 885
 guide sleeve travel mm : 5.46
 Tolerance mm : + - 0.25
 Rated speed rpm : 480
 guide sleeve travel mm : 3.18
 Tolerance mm : + - 0.25

Rated speed rpm : 1860
 guide sleeve travel mm : 13.50
 Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 164.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 114.0
 tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.60
 Rated speed rpm : 1375
 Tolerance 1/min : + - 5

rack travel mm : 7.50
 Rated speed rpm : 1470
 Tolerance 1/min : + - 15

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever position degree : 75.0
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : + - 0.20

Rated speed rpm : 250
CRT mm min. : > 8.00
Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.65
Tolerance mm : + - 0.05

Rated speed rpm : 900
rack travel mm : 12.40
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.90
Tolerance mm : + - 0.20

Rated speed rpm : 1300

Pressure hPa : 585
rack travel mm : 11.80
Tolerance mm : + - 0.20

Pressure hPa : 255
rack travel mm : 10.60
Tolerance mm : + - 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 900
Del. quantity cm3/1000 strokes : 164.0
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 104.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1375
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 185.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.96
Test oil : ISO 4113

Combination No. : 0 403 466 174

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governer design. : RSV500...1100MWOA398
Governer no. : 0 420 085 287

Cust. part No. : 3930122

Customer-spec. information

Customer : CDC
Motor : 6 CT
Power KW : 112.5

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.80
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 6.00
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1400

rack travel mm : 6.00
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 90.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.85
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 10.60
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 122.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 5.0
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 8.80
Rated speed rpm : 1165
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity
cm3/1000 strokes : 177.0
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.

See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113

Combination No. : 9 400 030 720

Injection pump
Pump designation : PES6A95D320/3RS2895
EP type number : 9 410 037 238

Governor
Governor design. : RSV475...1250A0C833R
Governor no. : 9 420 034 703

Cust. part No. : 3928595

Customer-spec. information

Customer : CDC
Motor : 68TA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.70
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.75
Tolerance mm : +- 0.05

Del. quantity
 cm³/1000 strokes : 111.5

 Tolerance
 cm³/1000 strokes : +- 1.0

 Check tolerance
 cm³/1000S. : +- 3.0

 Spread
 Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0

 Rated speed rpm : 475

 Rack travel in mm : 5.65
 Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 17.5
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

 Rack travel in mm : 0.50
 Tolerance mm : +- 0.20

 governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 111.5
 Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 106.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.70
 Rated speed rpm : 1320
 Tolerance 1/min : +- 5

 rack travel mm : 5.50
 Rated speed rpm : 1390
 Tolerance 1/min : +- 5

 rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1475

 rack travel mm : 5.50
 Rated speed rpm : 1390

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : +- 4.0

 Setting point w/out bumper spring

Rated speed rpm : 475
 rack travel mm : 5.15

Testing:

Rated speed rpm : 475
 rack travel mm : 5.65
 Tolerance mm : +- 0.10

 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 11.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1320
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.08.96
Test oil : ISO 4113

Combination No. : 9 400 030 721

Injection pump
Pump designation : PES6A95D320/3RS2895
EP type number : 9 410 037 238

Governor
Governor design. : RSV475...1250A0C839R
Governor no. :

Cust. part No. : 3929601

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.70
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : + 0.10
Check
tolerance *NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 107.5

Tolerance
 cm³/1000 strokes : +
 Check tolerance
 cm³/1000S. : +
 Spred
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 550
 Rack travel in mm : 5.30
 Tolerance mm : +
 Del. quantity
 cm³/1000 strokes : 17.5
 Tolerance
 cm³/1000 strokes : +
 Check tolerance
 cm³/1000S. : +
 Spred
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : +
 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 107.5
 Tolerance
 cm³/1000 strokes : +
 Check tolerance
 cm³/1000S. : +
 Spred

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 108.0
 tolerance degree : +
 4.0

RATED SPEED

rack travel mm : 11.80
 Rated speed rpm : 1325
 Tolerance 1/min : +
 5
 rack travel mm : 5.80
 Rated speed rpm : 1385
 Tolerance 1/min : +
 5
 rack travel mm : 0.85
 Tolerance mm : +
 0.55
 Rated speed rpm : 1450
 rack travel mm : 5.80
 Rated speed rpm : 1385

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : +
 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
 rack travel mm : 4.80

Testing:

Rated speed rpm : 550
 rack travel mm : 5.30
 Tolerance mm : +
 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.70
 Tolerance mm : +
 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST**

Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 15.0

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 11.00
Tolerance mm : \pm 0.20

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 17.5
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 72.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm3/1000 strokes : 121.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 733

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. :
Governor no. : 9 420 034 712

Cust. part No. : 3930149

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 105.5

Tolerance _____
 cm³/1000 strokes : + 1.0
 Check tolerance _____
 cm³/1000S. : + 3.0
 Spreed
 Tolerance _____
 cm³/1000 strokes : 4.0
 Check tolerance _____
 cm³/1000S. : 6.5
 Rated speed rpm : 425
 Rack travel in mm : 6.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 20.5
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 105.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

Spreed
 Tolerance _____
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 108.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.50
 Rated speed rpm : 1270
 Tolerance 1/min : + 5

rack travel mm : 6.70
 Rated speed rpm : 1340
 Tolerance 1/min : + 5

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1400

rack travel mm : 6.70
 Rated speed rpm : 1340

LOW IDLE

control lever
 position degree : 85.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
 rack travel mm : 5.50

Testing:

Rated speed rpm : 425
 rack travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 12.55

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 460
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1270
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.08.96
Test oil : ISO 4113

Combination No. : 0 401 848 829

Injection pump
Pump designation : PE8P110A320LS3865
EP type number : 0 411 818 728

Governor
Governor design. : RQ250/1150PA1250
Governor no. : 0 421 801 796

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : V2-8NA

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0. :

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 8.10
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 25.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.59
 Tolerance mm : + 0.20

Rated speed rpm : 1209
 guide sleeve
 travel mm : 7.49
 Tolerance mm : + 0.15

Rated speed rpm : 1150
 guide sleeve
 travel mm : 7.00
 Tolerance mm : + 0.10

Rated speed rpm : 411
 guide sleeve
 travel mm : 5.37
 Tolerance mm : + 0.10

Rated speed rpm : 510
 guide sleeve
 travel mm : 7.00
 Tolerance mm : + 0.10

Rated speed rpm : 1340
 guide sleeve
 travel mm : 11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
 Rack travel in mm : 15.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

CONTROL LEVER

control lever
 position degree : 36.0
 tolerance degree : + 4.0

control lever
 position degree : 98.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
 Rated speed rpm : 1203
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 8.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 150
CRT mm min. : $>$ 9.90

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.80
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1203
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.96
Test oil : ISO 4113

Combination No. : 0 402 066 708

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1150P2A619
Governor no. : 0 421 833 522

Cust. part No. : 3283019

Customer-spec. information

Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 136.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 6.75
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 179.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 7.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spred
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 179.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 6.70

Testing:

Rated speed rpm : 475
rack travel mm : 7.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 660
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 9.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.96
Test oil : ISO 4113

Combination No. : 0 402 066 711

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1150P2A619
Governor no. : 0 421 833 513

Cust. part No. : 3283521

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA ELITE
Power KW : 139.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : + - 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 2.85
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.30
Check
tolerance °NW : + - 0.50

Start of delivery blocking

*NW after s.o.d. : 6.75
Tolerance : + - 0.10
Check
tolerance *NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 7.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spred
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 102.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1280

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 84.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 6.70

Testing:

Rated speed rpm : 475

rack travel mm : 7.20

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 660

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.90
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 11.10
Tolerance mm : + - 0.20

Pressure hPa : 560
rack travel mm : 9.60
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 193.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 16.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1145
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm3/1000 strokes : 165.0
Tolerance
cm3/1000 strokes : + - 20.0
Check tolerance
cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 804

Injection pump
Pump designation : PES6P120A720RS3340
EP type number : 0 412 026 773

Governor
Governor design. : RSV650...1100P8A566
: -2
Governor no. : 0 421 833 559

Cust. part No. :

Customer-spec. information
Customer : NH
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery blocking

Check tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 10.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 143.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 4.70
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025

Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 143.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 6.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 4.00
Rated speed rpm : 1105

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1072
rack travel mm : 9.80

Rated speed rpm : 1100
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

Rated speed rpm : 1073
rack travel mm : 9.80

Rated speed rpm : 1101
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55

Rated speed rpm : 1074
rack travel mm : 9.80

Rated speed rpm : 1102
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55

Rated speed rpm : 1075
rack travel mm : 9.80

Rated speed rpm : 1103
Tolerance 1/min : + - 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1076
rack travel mm : 9.80

Rated speed rpm : 1104
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1077
rack travel mm : 9.80

Rated speed rpm : 1105
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.20

Testing:

Rated speed rpm : 650
rack travel mm : 4.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 760

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.55
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 11.55
Tolerance mm : \pm 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.60
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 840
rack travel mm : 10.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 600

Injection pump
Pump designation : PE6P120A720RS7022
EP type number : 0 412 626 873

Governor
Governor design. : RQV200...1000PA539
: -14
Governor no. : 0 421 814 011

Cust. part No. : 1343250

Customer-spec. information
Customer : SCANIA
Motor : DS11 76

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : +- 0.30
Check
tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.95
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.70

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 16.50

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 169.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 64.0

tolerance degree : + 4.0

control lever
position degree : 116.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.90

Rated speed rpm : 1045

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1130

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 67.0

tolerance degree : + 4.0

control lever

position degree : 23.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 250

rack travel mm : 4.70

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 420

Tolerance 1/min : + 30

Rated speed rpm : 150

CRT mm min. : > 6.20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 340
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Pressure hPa : 390
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10

Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.06.96
Test oil : ISO 4113

Combination No. : 0 402 646 640

Injection pump
Pump designation : PE6P120A320RS7311
: -10
EP type number : 0 412 626 932

Governor
Governer design. : RQV275...1150PA1110K
Governer no. : 0 421 815 375

Cust. part No. : 1280143/7

Customer-spec. information

Customer : DAF
Motor : RS 222 M
Power KW : 222.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 13.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 218.0

Tolerance _____
cm³/1000 strokes : + - 1.0

Check tolerance _____
cm³/1000S. : + - 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance _____
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.10
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.56
Tolerance mm : + - 0.25

Rated speed rpm : 1203
guide sleeve
travel mm : 10.07
Tolerance mm : + - 0.25

Rated speed rpm : 814
guide sleeve
travel mm : 6.79
Tolerance mm : + - 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.13
Tolerance mm : + - 0.25

Rated speed rpm : 350

guide sleeve
travel mm : 2.90
Tolerance mm : + - 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.90
Tolerance mm : + - 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1280
Rack travel in mm : 12.80
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.55
Rated speed rpm : 1192
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + - 0.70

Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 330
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : > 6.00

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 775
rack travel mm : 12.45
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1130
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1130
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1130

Pressure hPa : 580
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Pressure hPa : 320
rack travel mm : 10.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 850

Del. quantity
cm³/1000 strokes : 224.0
Tolerance

cm³/1000 strokes : \pm 2.0
Check tolerance

cm³/1000S. : \pm 5.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance

cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 146.5
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance

cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.55
Rated speed rpm : 1192
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 21.06.96

Test oil : ISO 4113

Combination No. : 0 402 646 972

Injection pump

Pump designation : PE6P120A320RS7218
: -10

EP type number : 0 412 626 891

Governor

Governor design. : RQV275...1000PA939
: -2

Governor no. : 0 421 813 986

Cust. part No. : 1249381/4

Customer-spec. information

Customer : DAF
Motor : WS 268 L
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 105
Tolerance l/h : + 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.35
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000s. : + 4.0

Spred Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000s. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity cm³/i000 strokes : 17.0
Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000s. : + 6.0
Spred Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve travel mm : 1.34
Tolerance mm : + 0.15

Rated speed rpm : 1058
guide sleeve travel mm : 8.05
Tolerance mm : + 0.20

Rated speed rpm : 676
guide sleeve travel mm : 4.49
Tolerance mm : + 0.25

Rated speed rpm : 301
guide sleeve travel mm : 1.78
Tolerance mm : + 0.25

Rated speed rpm : 351
guide sleeve travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 380
guide sleeve travel mm : 2.66
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1125
Rack travel in mm : 14.90
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 235.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000s. : + 4.0
Spred Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000s. : 9.0

CONTROL LEVER

control lever position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.95
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 14.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 490
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Pressure hPa : 280
rack travel mm : 12.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.95
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 09.08.96
Test oil : ISO 4113

Combination No. : 0 402 646 988

Injection pump
Pump designation : PE6P120A320RS7230
: -10X
EP type number : 0 412 626 899

Governor
Governor design. : RQV250...1000PA990K
Governor no. : 0 421 815 274

Cust. part No. : 1250705/4

Customer-spec. information

Customer : DAF
Motor : WS 295 L
Power KW : 295.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance

cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.53
Tolerance mm : + 0.10

Rated speed rpm : 1038
guide sleeve
travel mm : 9.74
Tolerance mm : + 0.10

Rated speed rpm : 686
guide sleeve
travel mm : 6.41
Tolerance mm : + 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : + 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.17
Tolerance mm : + 0.25

Rated speed rpm : 390

guide sleeve
travel mm : 3.79
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1130
Rack travel in mm : 13.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 259.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.95
Rated speed rpm : 1032
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 20

Rated speed rpm : 150
CRT mm min. : $>$ 7.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 825
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 8.90
Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 730
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Pressure hPa : 300
rack travel mm : 9.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 257.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1032
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.96
Test oil : ISO 4113

Combination No. : 0 402 736 862AA

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -30K
Governor no. : 0 421 815 432

Cust. part No. : 3282470

Customer-spec. information

Customer : CUMMINS
Motor : 6CTA-A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : + 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 6.00
Tolerance : + 0.10
Check tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.90

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 186.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 43.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.76
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1269
 guide sleeve
 travel mm : 9.75
 Tolerance mm : \pm 0.25
 Rated speed rpm : 829
 guide sleeve
 travel mm : 6.79
 Tolerance mm : \pm 0.25
 Rated speed rpm : 322
 guide sleeve
 travel mm : 1.98

Tolerance mm : \pm 0.25
 Rated speed rpm : 372
 guide sleeve
 travel mm : 2.75
 Tolerance mm : \pm 0.25
 Rated speed rpm : 460
 guide sleeve
 travel mm : 3.76
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1630
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1400
 Rack travel in mm : 12.90
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 186.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : \pm 4.0
 control lever
 position degree : 112.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.65
 Rated speed rpm : 1150
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 7.65

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.25
Tolerance mm : \pm 0.35

Rated speed rpm : 1100
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1200
rack travel mm : 14.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 700
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Rated speed rpm : 700

Pressure hPa : 900
rack travel mm : 14.30
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000s. : + - 4.0

BREAKAWAY

Rack travel in mm : 13.65
Rated speed rpm : 1150
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000s. : + - 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000s. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 893

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1100PA1244
: -2K
Governor no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.70
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.50
 Tolerance mm : \pm 0.05

 Del. quantity cm³/1000 strokes : 211.0

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spread
 Tolerance cm³/1000 strokes : 5.0

 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 350

 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.93
 Tolerance mm : \pm 0.20

 Rated speed rpm : 1159
 guide sleeve travel mm : 10.28
 Tolerance mm : \pm 0.15

 Rated speed rpm : 710
 guide sleeve travel mm : 5.79
 Tolerance mm : \pm 0.25

 Rated speed rpm : 500

guide sleeve travel mm : 4.70
 Tolerance mm : \pm 0.25

 Rated speed rpm : 1380
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1215

 Rack travel in mm : 13.30
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 211.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 66.0
 tolerance degree : \pm 4.0

control lever position degree : 122.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.50
 Rated speed rpm : 1145
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.50
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 15.00
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 15.40
Tolerance mm : \pm 0.15

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1050
Pressure hPa : 1500
rack travel mm : 15.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1050
rack travel mm : 11.05
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
Pressure hPa : 730
rack travel mm : 14.70
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 11.90
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.50
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spred
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 894

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1200PA1261
Governor no. : 0 421 815 495

Cust. part No. : 3282766

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery blocking

°NW after s.o.d. : 7.70
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.65

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 190.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread
 Tolerance cm³/1000 strokes : 7.0
 Check tolerance cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 1.93
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1258
 guide sleeve travel mm : 10.14
 Tolerance mm : \pm 0.15
 Rated speed rpm : 766
 guide sleeve travel mm : 5.91
 Tolerance mm : \pm 0.25
 Rated speed rpm : 450
 guide sleeve travel mm : 4.49

Tolerance mm : \pm 0.25
 Rated speed rpm : 1520
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1340
 Rack travel in mm : 12.60
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 190.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 66.0
 tolerance degree : \pm 4.0

control lever position degree : 120.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.60
 Rated speed rpm : 1245
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1370
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 18.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.65
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 14.10
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 14.75
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.65
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 11.10
Tolerance mm : + 0.20

Rated speed rpm : 1150

Pressure hPa : 570
rack travel mm : 13.90
Tolerance mm : + 0.20

Pressure hPa : 220
rack travel mm : 11.90
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 176.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0
Spread
Tolerance cm³/1000 strokes : 12.0
Check tolerance cm³/1000S. : 16.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 111.0
Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1245
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spred
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96
Test oil : ISO 4113

Combination No. : 0 402 946 027

Injection pump
Pump designation : PES6P120A320RS8047
EP type number : 0 412 926 029

Governor
Governor design. : RQV275...1250PA1312K
Governor no. : 0 421 815 966

Cust. part No. : CCEP 5160 66-244

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 06.02.26L71
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 11.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

*NW after s.o.d. : -0.60
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 19.50
Difference ° CS : 3.00

BASIC SETTING

Rated speed rpm : 1250

 Rack travel in mm : 12.10
 Tolerance mm : \pm 0.05

 Del. quantity cm³/1000 strokes : 185.0

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spred
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 325

 Rack travel in mm : -7.30
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 33.0
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spred
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.52
 Tolerance mm : \pm 0.20

 Rated speed rpm : 1340
 guide sleeve
 travel mm : 9.96
 Tolerance mm : \pm 0.15

 Rated speed rpm : 923
 guide sleeve
 travel mm : 6.76
 Tolerance mm : \pm 0.25

Rated speed rpm : 550
 guide sleeve
 travel mm : 3.92
 Tolerance mm : \pm 0.25

Rated speed rpm : 1650
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1430
 Rack travel in mm : 11.10
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1600
 Del. quantity cm³/1000 strokes : 185.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 296.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
 Rated speed rpm : 1333
 Tolerance 1/min : \pm 15

rack travel mm : -8.10
 Rated speed rpm : 1465
 Tolerance 1/min : \pm 5

rack travel mm : -11.60
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 243.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : -7.30
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : > -5.90

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 650
rack travel mm : -2.20
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -3.40
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1600
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -4.85
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 250
rack travel mm : -3.50
Tolerance mm : \pm 0.20

Pressure hPa : 700
rack travel mm : -0.60

Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 175
Rated speed rpm : < 240

Check
speed 1/min : > 155
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1333
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96
Test oil : ISO 4113

Combination No. : 0 402 946 028

Injection pump
Pump designation : PES6P120A320RS8047
EP type number : 0 412 926 029

Governor
Governor design. : RQV275...1175PA1312
: -1K
Governor no. : 0 421 815 965

Cust. part No. : CCEP 5161 66-245

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 060226 M71
Power KW : 158.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.70
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 19.50
Difference ° CS : 3.00

BASIC SETTING

Rated speed rpm : 1175

 Rack travel in mm : 13.30
 Tolerance mm : \pm 0.05

 Del. quantity cm³/1000 strokes : 269.0

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spread
 Tolerance cm³/1000 strokes : 5.0

 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 275

 Rack travel in mm : -7.30
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 40.0
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve
 travel mm : 0.98
 Tolerance mm : \pm 0.20

 Rated speed rpm : 1270
 guide sleeve
 travel mm : 9.30
 Tolerance mm : \pm 0.15

 Rated speed rpm : 893
 guide sleeve
 travel mm : 6.60

Tolerance mm : \pm 0.25

 Rated speed rpm : 560
 guide sleeve
 travel mm : 4.01
 Tolerance mm : \pm 0.25

 Rated speed rpm : 1650
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

 GUIDE SLEEVE POSITION

 Rated speed rpm : 1412

 Rack travel in mm : 12.20
 Tolerance mm : \pm 1.30

 FULL LOAD DELIVERY AT FULL LOAD STOP

 Rated speed rpm : 1175
 Aneroid pressure hPa : 1600
 Del. quantity cm³/1000 strokes : 269.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 297.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
 Rated speed rpm : 1262
 Tolerance 1/min : \pm 15

 rack travel mm : -9.20
 Rated speed rpm : 1431
 Tolerance 1/min : \pm 5

 rack travel mm : -12.80
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.30
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : > -6.40

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 650
rack travel mm : -1.75
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -3.00
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1175
Pressure hPa : 1600

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -5.55
Tolerance mm : \pm 0.20

Rated speed rpm : 1175

Pressure hPa : 320
rack travel mm : -4.10
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : -2.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 175
Rated speed rpm : < 240

Check
speed 1/min : > 155
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 259.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1262
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 6.0
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 14.08.96
Test oil : ISO 4113

Combination No. : 0 403 476 110

Injection pump
Pump designation : PES6MW100/720RS1131
: -1
EP type number : 0 413 406 165

Governor
Governor design. : RSV350...1300MW0A329
: -11
Governor no. : 0 420 085 181

Cust. part No. : 0220742702

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 1.50

Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 14.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 112.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 112.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1550

rack travel mm : 4.00
Rated speed rpm : 1420

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1330
rack travel mm : 13.45

Rated speed rpm : 1414
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1331
rack travel mm : 13.45

Rated speed rpm : 1415
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1332
rack travel mm : 13.45

Rated speed rpm : 1416
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1333
rack travel mm : 13.45

Rated speed rpm : 1417
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1338
rack travel mm : 13.45

Rated speed rpm : 1422
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1339
rack travel mm : 13.45

Rated speed rpm : 1423
Tolerance 1/min : + 4
rack travel mm : 4.00

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
rack travel mm : 14.45
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 14.45
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.45
Tolerance mm : + - 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 13.20
Tolerance mm : + - 0.10

Pressure hPa : 350

rack travel mm : 12.00
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.08.96
Test oil : ISO 4113

Combination No. : 0 403 486 105

Injection pump
Pump designation : PES6MW100/321RS1231
EP type number : 0 413 406 225

Governor
Governor design. : RSV300...1100MW0A343
: -1
Governor no. : 0 420 085 209

Cust. part No. : 3-7263

Customer-spec. information

Customer : MAN
Motor : D0826LE 522
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 365

Rack travel in mm : 4.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + - 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1130
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : + - 15

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 365
rack travel mm : 4.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.35
Tolerance mm : + - 0.05

Rated speed rpm : 1075
rack travel mm : 12.10
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 12.40
Tolerance mm : + - 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.40
Tolerance mm : + - 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.45
Tolerance mm : + - 0.05

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.75
Tolerance mm : + - 0.15

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1075
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1130
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 365
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.08.96
Test oil : ISO 4113

Combination No. : 0 403 486 106

Injection pump
Pump designation : PES6MW100/321RS1232
EP type number : 0 413 406 226

Governor
Governor design. : RSV300...1150MWOA343
: -2
Governor no. : 0 420 085 210

Cust. part No. : 3-7262

Customer-spec. information

Customer : MAN
Motor : D0826LE 523
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 165.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 365

Rack travel in mm : 4.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + - 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 165.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.15
Rated speed rpm : 1180
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : + - 15

rack travel mm : 1.00
Tolerance mm : + - 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 365
rack travel mm : 4.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 13.50
Tolerance mm : + - 0.05

Rated speed rpm : 1125
rack travel mm : 13.15
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 13.50
Tolerance mm : + - 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 12.35
Tolerance mm : \pm 0.15

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.15
Rated speed rpm : 1180
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 365
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.08.96
Test oil : ISO 4113

Combination No. : 0 400 844 047

Injection pump
Pump designation : PES4A90D410RS2294
EP type number : 0 410 894 011

Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 314
Power KW : 62.5

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 63.0

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 7.30
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Spread

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : + - 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : + - 0.15

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : + - 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : + - 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.95
Tolerance mm : + - 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1420
Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : + - 0.5
Check tolerance
cm³/1000s. : + - 2.5
Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000s. : 4.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.80

Rated speed rpm : 445

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

BREAKAWAY

Rack travel in mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000s. : + 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.08.96
Test oil : ISO 4113

Combination No. : 0 400 844 083

Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029

Governor
Governor design. : RQV300...1400AB1065
: -5L
Governor no. : 0 420 212 169

Cust. part No. : 010 074 0602

Customer-spec. information

Customer : MB-NFZ
Motor : OM364
Power KW : 66.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.95
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 63.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000s. : + 2.5

Spread
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000s. : 5.0

Rack travel in mm : 8.70
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 63.5

Tolerance

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 2.5

Spread

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 5.0

CONTROL LEVER

control lever

position degree : 111.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.90

Rated speed rpm : 1455

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1575

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1700

LOW IDLE

control lever

position degree : 72.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 10.20

Rated speed rpm : 610

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.95
Tolerance mm : \pm 0.05

Rated speed rpm : 630
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 630

Del. quantity

cm³/1000 strokes : 57.0

Tolerance

cm³/1000 strokes : \pm 1.5

Check tolerance

cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -

Rated speed rpm : 900

Del. quantity

cm³/1000 strokes : 56.0

Tolerance

cm³/1000 strokes : \pm 1.5

Check tolerance

cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1455
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000s. : + - 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.08.96
Test oil : ISO 4113

Combination No. : 0 400 876 367

Injection pump
Pump designation : PES6A90D410RS2710-1
EP type number : 0 410 896 084

Governor
Governor design. : RSV350...750AOC2240
: -2L
Governor no. : 0 420 232 558

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366
Power KW : 60.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.20
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 64.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000s. : + 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance cm³/1000S. : 7.0
 Rated speed rpm : 350
 Rack travel in mm : 8.20
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 9.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.5
 Check tolerance cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 64.5
 Tolerance cm³/1000 strokes : + 0.5
 Check tolerance cm³/1000S. : + 2.5
 Spread
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 7.0

CONTROL LEVER

control lever position degree : 86.0
 tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
 rack travel mm : 11.20
 Rated speed rpm : 784
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

Rated speed rpm : 751
 rack travel mm : 11.20

Rated speed rpm : 785
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

Rated speed rpm : 752
 rack travel mm : 11.20

Rated speed rpm : 786
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

Rated speed rpm : 753
 rack travel mm : 11.20

Rated speed rpm : 787
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

Rated speed rpm : 754
 rack travel mm : 11.20

Rated speed rpm : 788
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

Rated speed rpm : 755
 rack travel mm : 11.20

Rated speed rpm : 789
 Tolerance 1/min : + 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 900

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 8.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.20
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.70
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 83.0
Tolerance
cm3/1000 strokes : \pm 7.5
Check tolerance
cm3/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 350

Del. quantity
cm3/1000 strokes : 9.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000s. : \pm 4.0
Spred
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 799

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV625...1100P2A639
Governor no. : 0 421 833 551

Cust. part No. : RE67359

Customer-spec. information

Customer : DEERE
Motor : 6081HZ005
Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + - 1.0

Prestroke mm : 3.60
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.30
Check
tolerance °NW : + - 0.75

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

 Rack travel in mm : 11.90
 Tolerance mm : \pm 0.05

 Del. quantity
 cm³/1000 strokes : 145.0

 Tolerance
 cm³/1000 strokes : \pm 1.0

 Check tolerance
 cm³/1000S. : \pm 3.0

 Spread
 Tolerance
 cm³/1000 strokes : 4.0

 Check tolerance
 cm³/1000S. : 6.5

 Rated speed rpm : 625

 Rack travel in mm : 5.10
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 20.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 145.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 95.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.90
 Rated speed rpm : 1150
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1210
 Tolerance 1/min : \pm 5

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1350

rack travel mm : 4.00
 Rated speed rpm : 1210

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 625
 rack travel mm : 4.50

Testing:

Rated speed rpm : 625
 rack travel mm : 5.10
 Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.90
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 13.35
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 830
rack travel mm : 12.50
Tolerance mm : + - 0.20

Pressure hPa : 400
rack travel mm : 10.90
Tolerance mm : + - 0.05

START CUT-OUT

Rated speed rpm : > 100

Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 700
Del. quantity cm3/1000 strokes : 181.5
Tolerance cm3/1000 strokes : + - 2.0

Check tolerance cm3/1000S. : + - 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 100.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1150
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 105.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 625
Del. quantity cm3/1000 strokes : 20.5
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 5.0
Spread Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 695

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C825R
Governor no. : 9 420 034 701

Cust. part No. : 3928665

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity
 cm3/1000 strokes : 110.5
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spread
 Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 6.5
 Rated speed rpm : 475
 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 20.5
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 110.5
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spread

Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 106.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70
 Rated speed rpm : 1315
 Tolerance 1/min : \pm 5

rack travel mm : 5.90
 Rated speed rpm : 1395
 Tolerance 1/min : \pm 5

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1450

rack travel mm : 5.90
 Rated speed rpm : 1395

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
 rack travel mm : 5.00

Testing:

Rated speed rpm : 475
 rack travel mm : 5.50
 Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.75
 Tolerance mm : \pm 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 12.20
Tolerance mm : + - 0.20

Pressure hPa : 460
rack travel mm : 11.40
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1315
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50

Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 9 400 030 735

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1100A0C848R
Governor no. : 9 420 034 714

Cust. part No. : 3929411

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance _____
 cm³/1000 strokes : + 1.0
 Check tolerance _____
 cm³/1000S. : + 3.0
 Spreed
 Tolerance _____
 cm³/1000 strokes : 3.5
 Check tolerance _____
 cm³/1000S. : 6.0
 Rated speed rpm : 500
 Rack travel in mm : 5.10
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 18.5
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 76.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

Spreed
 Tolerance _____
 cm³/1000 strokes : 3.5
 Check tolerance _____
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.50
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

rack travel mm : 4.50
 Rated speed rpm : 1215
 Tolerance 1/min : + 5

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1300

rack travel mm : 4.50
 Rated speed rpm : 1215

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
 rack travel mm : 4.60

Testing:

Rated speed rpm : 500
 rack travel mm : 5.10
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 9.65

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Check tolerance
cm³/1000s. : 5.5

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.50
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 9 400 030 736

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. :
Governor no. : 9 420 034 715

Cust. part No. : 3929769

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 88.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 20b.J
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.55
Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 80.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 425
 Rack travel in mm : 5.10
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 18.5
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

Rack travel mm : 8.50
 Rated speed rpm : 1275
 Tolerance 1/min : + - 5
 Rack travel mm : 5.60
 Rated speed rpm : 1335
 Tolerance 1/min : + - 5
 Rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1465

Rack travel mm : 5.60
 Rated speed rpm : 1335

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 4.60

Testing:

Rated speed rpm : 425
 rack travel mm : 5.10
 Tolerance mm : + - 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 9.55
Tolerance mm : + - 0.05

Rated speed rpm : 800

BREAKAWAY

Rack travel in mm : 8.50

Rated speed rpm : 1275
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000s. : + - 15.0

LOW IDLE

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 797

Injection pump
Pump designation : PES6P120A720RS3378
EP type number : 0 412 026 799

Governor
Governor design. : RSV450...1000P5A637
Governor no. : 0 421 833 548

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.541
Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 240
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 9.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 125.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : +⁻ 4.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 450
 Rack travel in mm : 4.20
 Tolerance mm : +⁻ 0.10
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : +⁻ 3.0
 Check tolerance cm³/1000S. : +⁻ 6.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : +⁻ 0.20
 governor spring pre-tension click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 125.0
 Tolerance cm³/1000 strokes : +⁻ 1.0
 Check tolerance cm³/1000S. : +⁻ 4.0
 Spred Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 102.0
 tolerance degree : +⁻ 4.0

RATED SPEED

rack travel mm : 8.00
 Rated speed rpm : 1070
 Tolerance 1/min : +⁻ 5
 rack travel mm : 4.00
 Rated speed rpm : 1115
 Tolerance 1/min : +⁻ 15
 rack travel mm : 0.85
 Tolerance mm : +⁻ 0.55
 Rated speed rpm : 1400
 rack travel mm : 4.00
 Rated speed rpm : 1125

LOW IDLE

control lever position degree : 80.0
 tolerance degree : +⁻ 4.0

Setting point w/out bumper spring
 Rated speed rpm : 450
 rack travel mm : 3.70

Testing:

Rated speed rpm : 450
 rack travel mm : 4.20
 Tolerance mm : +⁻ 0.10
 rack travel mm : 2.00
 Rated speed rpm : 560
 Tolerance 1/min : +⁻ 50

TORQUE CONTROL

Rated speed rpm : 1000
 rack travel mm : 9.00
 Tolerance mm : +⁻ 0.05
 Rated speed rpm : 500

rack travel mm : 9.05
Tolerance mm : \pm 0.10

Rated speed rpm : 330
rack travel mm : 9.60
Tolerance mm : \pm 0.20

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 8.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 0 402 735 810

Injection pump
Pump designation : PES5P120A720/3LS7310
EP type number : 0 412 725 817

Governor
Governor design. : RQ325/1000PA1106-1
Governor no. : 0 421 801 700

Cust. part No. : 3-7324

Customer-spec. information

Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.80
Tolerance mm : + 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance cm³/1000 strokes : +⁻ 1.0
 Check tolerance cm³/1000S. : +⁻ 4.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 325
 Rack travel in mm : 4.90
 Tolerance mm : +⁻ 0.10
 Del. quantity cm³/1000 strokes : 43.0
 Tolerance cm³/1000 strokes : +⁻ 3.0
 Check tolerance cm³/1000S. : +⁻ 6.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve travel mm : 2.50
 Tolerance mm : +⁻ 0.10

Rated speed rpm : 1071
 guide sleeve travel mm : 7.35
 Tolerance mm : +⁻ 0.10

Rated speed rpm : 1000
 guide sleeve travel mm : 7.01
 Tolerance mm : +⁻ 0.10

Rated speed rpm : 777
 guide sleeve travel mm : 7.01
 Tolerance mm : +⁻ 0.10

Rated speed rpm : 408
 guide sleeve travel mm : 4.50

Tolerance mm : +⁻ 0.10
 Rated speed rpm : 530
 guide sleeve travel mm : 7.00
 Tolerance mm : +⁻ 0.10
 Rated speed rpm : 1220
 guide sleeve travel mm : 11.50
 Tolerance mm : +⁻ 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
 Rack travel in mm : 15.50
 Tolerance mm : +⁻ 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure hPa : 750
 Del. quantity cm³/1000 strokes : 235.0
 Tolerance cm³/1000 strokes : +⁻ 1.0
 Check tolerance cm³/1000S. : +⁻ 4.0
 Spred Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 100.0
 tolerance degree : +⁻ 4.0

RATED SPEED

rack travel mm : 11.20
 Rated speed rpm : 1053
 Tolerance 1/min : +⁻ 8

rack travel mm : 4.00
 Rated speed rpm : 1130
 Tolerance 1/min : +⁻ 15

rack travel mm : 0.50
 Tolerance mm : +⁻ 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : \pm 0.15

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 12.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

Pressure hPa : 1000
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 1250
rack travel mm : 11.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1053

Tolerance 1/min : +— 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : +— 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : +— 10.0
Check tolerance
cm³/1000S. : +— 14.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : +— 3.0
Check tolerance
cm³/1000S. : +— 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 0 402 735 811

Injection pump
Pump designation : PES5P120A720/3LS7348
EP type number : 0 412 725 818

Governor
Governor design. : RQ325/1000PA1106-2
Governor no. : 0 421 801 750

Cust. part No. : 3-7392

Customer-spec. information

Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.80
Tolerance mm : + 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.20
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0
 Rated speed rpm : 325
 Rack travel in mm : 4.90
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 43.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve travel mm : 2.50
 Tolerance mm : + 0.10
 Rated speed rpm : 1059
 guide sleeve travel mm : 7.34
 Tolerance mm : + 0.10
 Rated speed rpm : 1000
 guide sleeve travel mm : 7.00
 Tolerance mm : + 0.10
 Rated speed rpm : 401
 guide sleeve travel mm : 4.29
 Tolerance mm : + 0.10
 Rated speed rpm : 530
 guide sleeve travel mm : 7.00
 Tolerance mm : + 0.10
 Rated speed rpm : 1210

guide sleeve travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
 Rack travel in mm : 15.50
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure hPa : 2000
 Del. quantity cm³/1000 strokes : 264.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spred Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 100.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20
 Rated speed rpm : 1053
 Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1130
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever position degree : 73.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
 rack travel mm : 4.90
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 390
 Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 750
 rack travel mm : 12.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 1000
 rack travel mm : 12.20
 Tolerance mm : \pm 0.10

Rated speed rpm : 550
 rack travel mm : 10.80
 Tolerance mm : \pm 0.10

Rated speed rpm : 1000
 rack travel mm : 12.60
 Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 500
 Pressure hPa : 2000
 rack travel mm : 12.20
 Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 8.70
 Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 300
 rack travel mm : 9.00
 Tolerance mm : \pm 0.05

Pressure hPa : 500

rack travel mm : 10.05
 Tolerance mm : \pm 0.15

Pressure hPa : 1000
 rack travel mm : 11.05
 Tolerance mm : \pm 0.10

Pressure hPa : 1250
 rack travel mm : 11.65
 Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 2000
 Rated speed rpm : 1000
 Del. quantity cm³/1000 strokes : 244.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : 750
 Rated speed rpm : 550
 Del. quantity cm³/1000 strokes : 235.0
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 5.0

Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 169.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
 Rated speed rpm : 1053
 Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.08.96
Test oil : ISO 4113

Combination No. : 0 402 744 805

Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQ400/1200PA1319
Governor no. : 0 421 801 813

Cust. part No. : 51.11103-7553

Customer-spec. information

Customer : MAN
Motor : D 0824 LOH 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 087

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 5.0

Check tolerance cm³/1000S. : + 8.0

Spread

Tolerance cm³/1000 strokes : 3.0

Check tolerance cm³/1000S. : 6.0

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 206.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spread
Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 40.0

Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000S. : + 6.0

Spread
Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400

guide sleeve
travel mm : 2.94
Tolerance mm : + 0.20

Rated speed rpm : 1256
guide sleeve
travel mm : 7.33
Tolerance mm : + 0.15

Rated speed rpm : 1200
guide sleeve
travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 443
guide sleeve
travel mm : 4.95
Tolerance mm : + 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1269

Rack travel in mm : 12.05
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 206.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spread
Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1335
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 433
Tolerance 1/min : \pm 20

Rated speed rpm : 300

CRT mm min. : $>$ -1.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 9.20
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.25

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0

Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : + - 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : + - 0.30
Del. quantity
cm3/1000 strokes : 50.0
Tolerance
cm3/1000 strokes : + - 8.0
Check tolerance
cm3/1000S. : + - 12.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 0 403 476 146

Injection pump
Pump designation : PES6MW100/320RS1245
EP type number : 0 413 406 247

Governor
Governor design. : RSV300...1100MW0A400
Governor no. : 0 420 085 293

Cust. part No. : 11032700

Customer-spec. information

Customer : VCE
Motor : TD 63KDE
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 5.40
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : ± 2.0

Check tolerance
 cm³/1000S. : ± 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 105.0
 Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 81.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1420

rack travel mm : 4.00
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 106.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.90

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 820
rack travel mm : 12.80
Tolerance mm : \pm 0.20

Rated speed rpm : 770
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.90
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Pressure hPa : 120
rack travel mm : 11.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 400 874 240

Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029

Governor
Governor design. : RSV350...1400A0C2006
: -1L
Governor no. : 0 420 232 449

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM364
Power KW : 66.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 63.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rack travel in mm : 7.90
Tolerance mm : + 0.10

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 63.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.40

Rated speed rpm : 1435
Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1495
Tolerance 1/min : + 15

rack travel mm : 1.00

Tolerance mm : + 0.70
Rated speed rpm : 1575

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.45
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.75
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 11.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1435
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 400 874 248

Injection pump
Pump designation : PES4A90D410RS2728
EP type number : 0 410 894 030

Governor
Governor design. : RSV350...750A0C2240
: -3L
Governor no. : 0 420 232 559

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM364
Power KW : 39.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance *NW : + 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 58.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000 strokes : + 3.0

Spread
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000 strokes : 4.5

Rated speed rpm : 350

Rack travel in mm : 8.60
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000 strokes : + 4.0
Spread

Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20
governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 80.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.00
Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 850
Rated speed rpm : 751
rack travel mm : 11.00

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 11.00

Rated speed rpm : 786
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 11.00

Rated speed rpm : 787
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 11.00

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 11.00

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 8.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + - 15

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

End of test specification sheet

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.70
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000s. : + - 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000s. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 400 876 331

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0 410 896 082

Governor
Governor design. : RSV350...1400AOC2006
: -2L
Governor no. : 0 420 232 453

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet Line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance check : + 0.50
tolerance *NW : + 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.75
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : + - 0.5

Check tolerance
cm³/1000S. : + - 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 8.10
Tolerance mm : + - 0.10

Del. quantity
 cm³/1000 strokes : 8.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVFR

control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.70
 Rated speed rpm : 1435
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : + 15
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 8.10
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 510
 Tolerance 1/min : + 30
 Rated speed rpm : 100
 CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1380
 rack travel mm : 10.75
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 11.85
 Tolerance mm : + 0.05
 Rated speed rpm : 900
 rack travel mm : 11.40
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1435
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 7.5
Check tolerance
cm³/1000S. : + 10.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.08.96
Test oil : ISO 4113

Combination No. : 0 402 034 700

Injection pump
Pump designation : PES4P120B120RS3379
EP type number : 0 412 024 702

Governor
Governor design. : RQV475...1100PA1314K
Governor no. : 0 421 815 543

Cust. part No. : 3928601

Customer-spec. information

Customer : CDC
Motor : 48TA-A
Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.30
Check
tolerance *NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 140.5

Tolerance mm : \pm 0.50
 cm³/1000 strokes : \pm 1.0

 Check tolerance mm : \pm 4.0

 Spread Tolerance cm³/1000 strokes : 8.0

 Check tolerance cm³/1000S. : 12.0

 Rated speed rpm : 475

 Rack travel in mm : 5.70
 Tolerance mm : \pm 0.20
 Del. quantity cm³/1000 strokes : 26.5
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 475
 guide sleeve travel mm : 1.59
 Tolerance mm : \pm 0.20

 Rated speed rpm : 1163
 guide sleeve travel mm : 7.66
 Tolerance mm : \pm 0.15

 Rated speed rpm : 931
 guide sleeve travel mm : 5.89
 Tolerance mm : \pm 0.25

 Rated speed rpm : 670
 guide sleeve travel mm : 3.53
 Tolerance mm : \pm 0.25

 Rated speed rpm : 1660
 guide sleeve travel mm : 13.50

Tolerance mm : \pm 0.50

 FULL LOAD DELIVERY AT FULL LOAD STOP
 Rated speed rpm : 1100
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 140.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 115.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
 Rated speed rpm : 1155
 Tolerance 1/min : \pm 15

rack travel mm : 6.70
 Rated speed rpm : 1230
 Tolerance 1/min : \pm 5

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 77.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 475
 rack travel mm : 5.70
 Tolerance mm : \pm 0.20

Rated speed rpm : 400
 CRT mm min. : > 6.80

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 765
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 10.10
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 375

Check speed 1/min : > 80
Check speed 1/min : < 385

FUEL DELIVERY CHARACTERISTICS

NO?

Aneroid pressure hPa : 1200
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 144.5
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread

Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0
Aneroid pressure hPa : -
Rated speed rpm : 1100
Del. quantity cm³/1000 strokes : 107.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1155
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity cm³/1000 strokes : 176.0
Tolerance cm³/1000 strokes : \pm 20.0
Check tolerance cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity cm³/1000 strokes : 26.5
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 5.0
Spread

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.08.96
Test oil : ISO 4113

Combination No. : 0 402 034 701

Injection pump
Pump designation : PES4P120B120RS3379
EP type number : 0 412 024 702

Governor
Governor design. : RQV475...1250PA1316K
Governor no. : 0 421 815 544

Cust. part No. : 3928600

Customer-spec. information

Customer : CDC
Motor : 4BTA-A
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inject line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 143.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0
 Rated speed rpm : 475
 Rack travel in mm : 5.70
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 26.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spred
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 475
 guide sleeve
 travel mm : 1.59
 Tolerance mm : + 0.20
 Rated speed rpm : 1313
 guide sleeve
 travel mm : 9.12
 Tolerance mm : + 0.15
 Rated speed rpm : 985
 guide sleeve
 travel mm : 6.26
 Tolerance mm : + 0.25
 Rated speed rpm : 680
 guide sleeve
 travel mm : 3.62
 Tolerance mm : + 0.25
 Rated speed rpm : 1660
 guide sleeve
 travel mm : 13.50

Tolerance mm : + 0.50
 FULL LOAD DELIVERY AT FULL LOAD STOP
 Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 143.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1315
 Tolerance 1/min : + 15

rack travel mm : 6.00
 Rated speed rpm : 1390
 Tolerance 1/min : + 5

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 475
 rack travel mm : 5.70
 Tolerance mm : + 0.20

Rated speed rpm : 400
 CRT mm min. : > 7.00

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 800
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 680
rack travel mm : 10.30
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 375

Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 385

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 142.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0
Spread

Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0
Aneroid pressure hPa : -
Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 111.5
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity cm³/1000 strokes : 176.0
Tolerance cm³/1000 strokes : \pm 20.0
Check tolerance cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity cm³/1000 strokes : 26.5
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 5.0
Spread

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.95
Test oil : ISO 4113

Combination No. : 0 402 196 708

Injection pump
Pump designation : PES6P120A720RS3362
EP type number : 0 412 026 787

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 64860

Customer-spec. information

Customer : DEERE
Motor : 6076ADW31
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.75
Tolerance : +- 0.50
Check
tolerance *NW : +- 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Tolerance mm : +- 0.50
Difference ° CS : 3.25

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 139.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 141.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.580
Del. quantity
cm3/1000 strokes : 22.5
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.580
Tolerance Volt : \pm 0.060
Check tolerance Volt : \pm 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity cm³/1000 strokes : 105.0
Tolerance cm³/1000 strokes : \pm 10.0
Check tolerance cm³/1000s. : \pm 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.08.96
Test oil : ISO 4113

Combination No. : 0 402 746 613

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1250PA1283K
Governor no. : 0 421 815 516

Cust. part No. : 3866785

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 11.50
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.05
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 129.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 7.40
 Tolerance mm : \pm 0.20
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve travel mm : 1.39
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1305
 guide sleeve travel mm : 7.93
 Tolerance mm : \pm 0.15
 Rated speed rpm : 864
 guide sleeve travel mm : 5.36
 Tolerance mm : \pm 0.25
 Rated speed rpm : 480
 guide sleeve travel mm : 3.18
 Tolerance mm : \pm 0.25

Rated speed rpm : 1860
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure hPa : 900
 Del. quantity cm³/1000 strokes : 129.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 114.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 1310
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever position degree : 76.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.40
 Tolerance mm : \pm 0.20

Rated speed rpm : 275
 CRT mm min. : > 8.20
 Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.05
 Tolerance mm : + - 0.05

Rated speed rpm : 900
 rack travel mm : 11.80
 Tolerance mm : + - 0.10

Rated speed rpm : 800
 rack travel mm : 12.00
 Tolerance mm : + - 0.10

Rated speed rpm : 600
 rack travel mm : 11.40
 Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
 Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 1250
 rack travel mm : 10.00
 Tolerance mm : + - 0.20

Rated speed rpm : 1250

Pressure hPa : 550
 rack travel mm : 11.10
 Tolerance mm : + - 0.20

Pressure hPa : 265
 rack travel mm : 10.30
 Tolerance mm : + - 0.20

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 250

Check speed 1/min : > 80

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
 Rated speed rpm : 900
 Del. quantity cm³/1000 strokes : 132.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
 Rated speed rpm : 1000
 Del. quantity cm³/1000 strokes : 93.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.00
 Rated speed rpm : 1310
 Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.00
 Tolerance mm : + - 0.50
 Del. quantity cm³/1000 strokes : 185.0
 Tolerance cm³/1000 strokes : + - 20.0
 Check tolerance cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 402 746 615

Injection pump
Pump designation : PES6P120A320RS7419
EP type number : 0 412 726 961

Governor
Governor design. : RQV300...1300PA1289K
Governor no. : 0 421 815 520

Cust. part No. : 386 6800

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 249.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + - 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + - 1.0

Prestroke mm : 3.60
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.30
Check
tolerance °NW : + - 0.75

Start of delivery blocking

*NW after s.o.d. : 12.50
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.60
Tolerance mm : + - 0.05

Del. quantity : 203.5
 cm³/1000 strokes : 203.5
 Tolerance : \pm 1.0
 Check tolerance : \pm 4.0
 Spread
 Tolerance : \pm 8.0
 Check tolerance : \pm 12.0
 Rated speed rpm : 300
 Rack travel in mm : 6.35
 Tolerance mm : \pm 0.20
 Del. quantity : 32.5
 cm³/1000 strokes : 32.5
 Tolerance : \pm 3.0
 Check tolerance : \pm 5.0
 Spread
 Tolerance : \pm 5.0
 Check tolerance : \pm 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.71
 Tolerance mm : \pm 0.20
 Rated speed rpm : 1322
 guide sleeve
 travel mm : 9.57
 Tolerance mm : \pm 0.15
 Rated speed rpm : 861
 guide sleeve
 travel mm : 6.74
 Tolerance mm : \pm 0.25
 Rated speed rpm : 520
 guide sleeve
 travel mm : 5.06
 Tolerance mm : \pm 0.25

Rated speed rpm : 1720
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure hPa : 1200
 Del. quantity : 203.5
 cm³/1000 strokes : 203.5
 Tolerance : \pm 1.0
 Check tolerance : \pm 4.0
 Spread
 Tolerance : \pm 8.0
 Check tolerance : \pm 12.0

CONTROL LEVER

control lever
 position degree : 117.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.60
 Rated speed rpm : 1320
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1470
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1575

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 6.35
 Tolerance mm : \pm 0.20

Rated speed rpm : 250
 CRT mm min. : > 7.80
 Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.60
 Tolerance mm : \pm 0.05

Rated speed rpm : 800
 rack travel mm : 12.20
 Tolerance mm : \pm 0.10

Rated speed rpm : 1100
 rack travel mm : 12.55
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
 Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 1100
 rack travel mm : 9.70
 Tolerance mm : \pm 0.20

Rated speed rpm : 1100
 Pressure hPa : 880
 rack travel mm : 11.80
 Tolerance mm : \pm 0.20

Pressure hPa : 385
 rack travel mm : 10.50
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 206.0
 Tolerance
 cm³/1000 strokes : \pm 3.0

Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 122.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.60
 Rated speed rpm : 1320
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 9.70
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 176.5
 Tolerance
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 402 776 838

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV625...1100POA547
: -14
Governor no. : 0 421 833 545

Cust. part No. : RE67358

Customer-spec. information

Customer : DEERE
Motor : 6081 HZ001
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : 9.50
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 625

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spred
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 2000

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1235

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1235

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 625
rack travel mm : 4.60

Testing:

Rated speed rpm : 625
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.45
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.60
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 1350
rack travel mm : 12.30
Tolerance mm : + - 0.20

Pressure hPa : 630
rack travel mm : 10.50
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 262.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700

Del. quantity
cm3/1000 strokes : 136.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1175
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + - 20.0
Check tolerance
cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 625
Del. quantity
cm3/1000 strokes : 21.5
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 5.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 160

Injection pump
Pump designation : PES6MW100/120RS1240
EP type number : 0 413 406 239

Governor
Governor design. : RSV500...1100MW2A378
Governor no. : 0 420 085 261

Cust. part No. : 3927129

Customer-spec. information

Customer : CDC
Motor : 6 CTA
Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference * CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 151.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance cm³/1000s. : 7.5
 Rated speed rpm : 500
 Rack travel in mm : 5.20
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 21.5
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000s. : \pm 4.5
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring pre-tension
 click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 151.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000s. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000s. : 7.5

CONTROL LEVER

control lever
 position degree : 103.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.40
 Rated speed rpm : 1160
 Tolerance 1/min : \pm 5
 rack travel mm : 6.30
 Rated speed rpm : 1230
 Tolerance 1/min : \pm 5
 rack travel mm : 1.00
 Tolerance mm : \pm 0.70
 Rated speed rpm : 1375
 rack travel mm : 6.30
 Rated speed rpm : 1230

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : \pm 4.0
 Setting point w/out bumper spring

Rated speed rpm : 500
 rack travel mm : 4.70

Testing:

Rated speed rpm : 500
 rack travel mm : 5.20
 Tolerance mm : \pm 0.10
 Rated speed rpm : 100
 CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.45
 Tolerance mm : \pm 0.05
 Rated speed rpm : 750
 rack travel mm : 13.50
 Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : + - 0.20

Rated speed rpm : 500

Pressure hPa : 790
rack travel mm : 12.30
Tolerance mm : + - 0.20

Pressure hPa : 620
rack travel mm : 11.40
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1160
Tolerance 1/min : + - 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 145.5
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.96
Test oil : ISO 4113

Combination No. : 0 403 466 167

Injection pump
Pump designation : PES6MW100/120RS1240
EP type number : 0 413 406 239

Governor
Governor design. : RSV475...1000MW2A388
Governor no. : 0 420 085 268

Cust. part No. : 3929173

Customer-spec. information

Customer : CDC
Motor : 6 CTA
Power KW : 171.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 3.55
Tolerance mm : +- 0.05
Check tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1055
Tolerance 1/min : \pm 5

rack travel mm : 5.80
Rated speed rpm : 1135
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1230

rack travel mm : 5.80
Rated speed rpm : 1135

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.70

Testing:

Rated speed rpm : 475
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 790
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Pressure hPa : 620
rack travel mm : 11.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 128.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1055
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet